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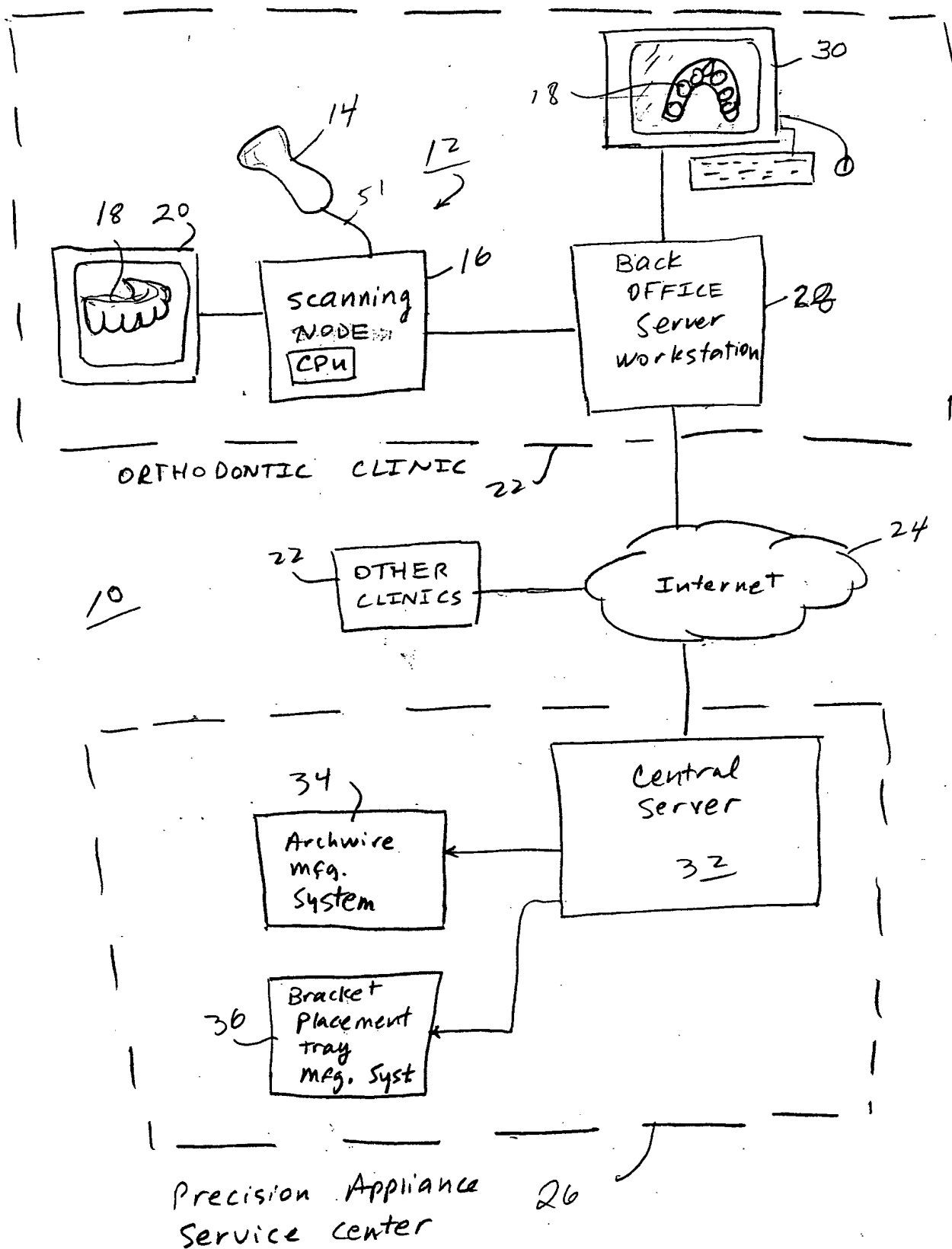


Fig. 1

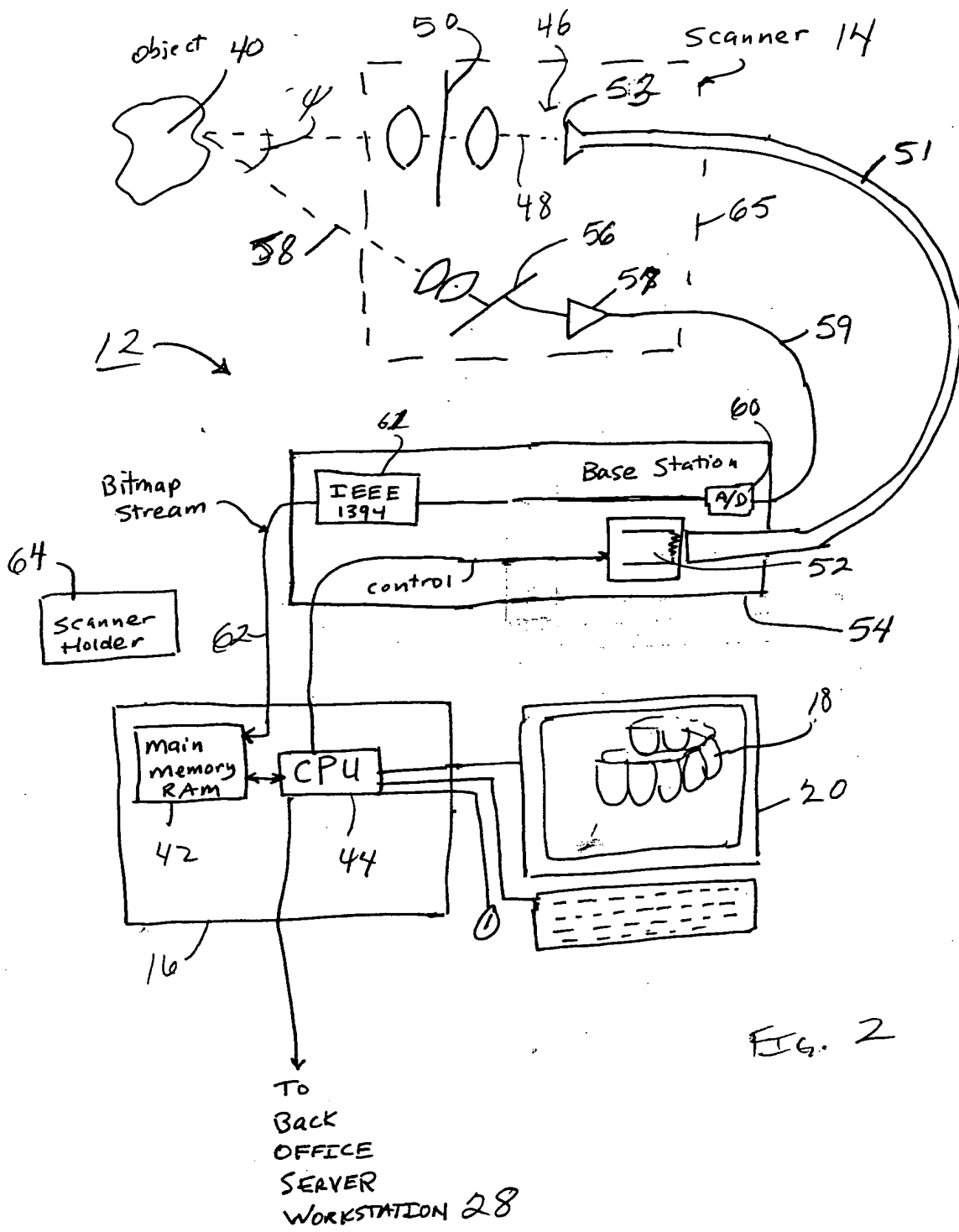


FIG. 2

14

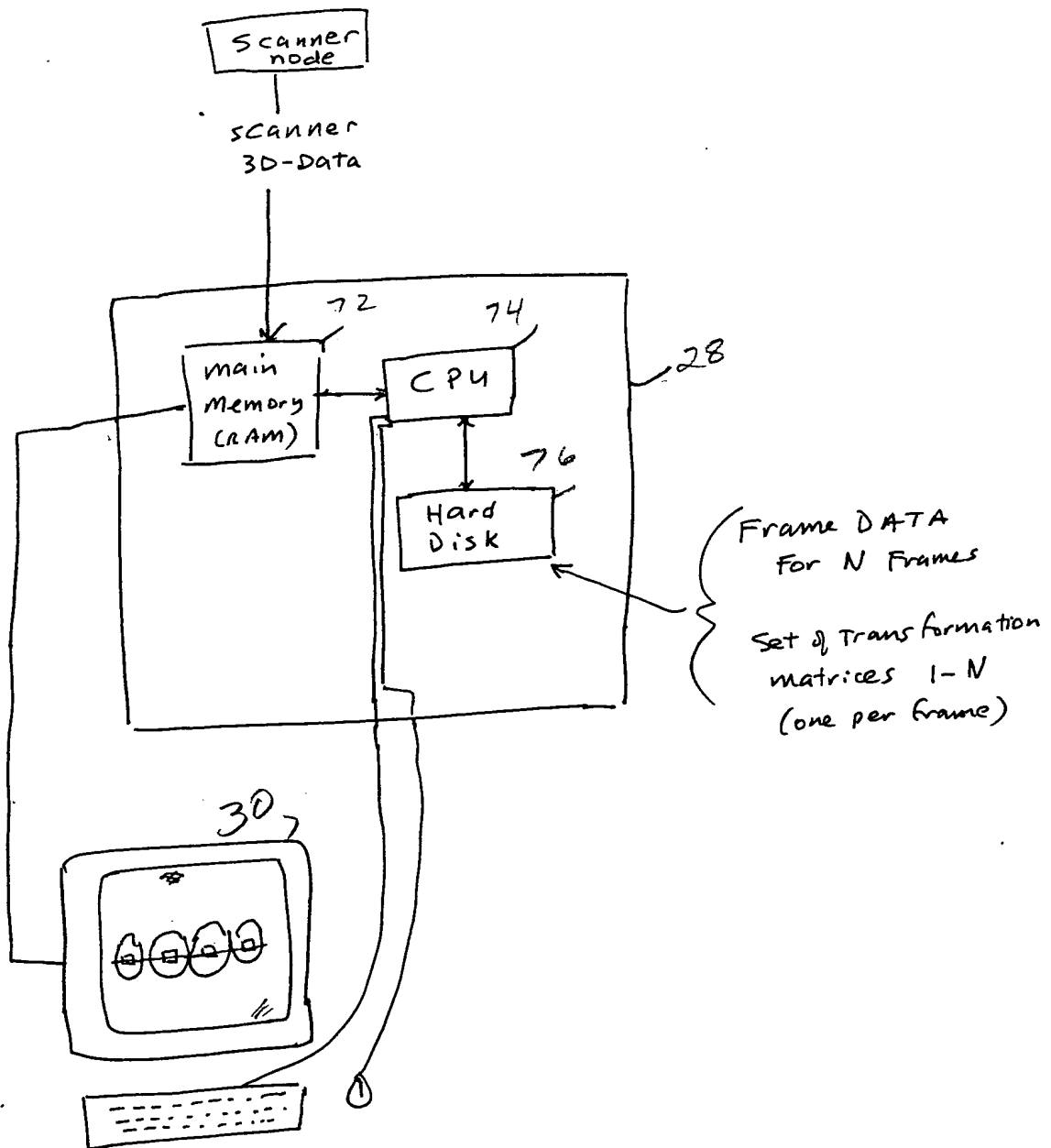


Fig. 5

3-Dimensional IMAGE capture (per frame)

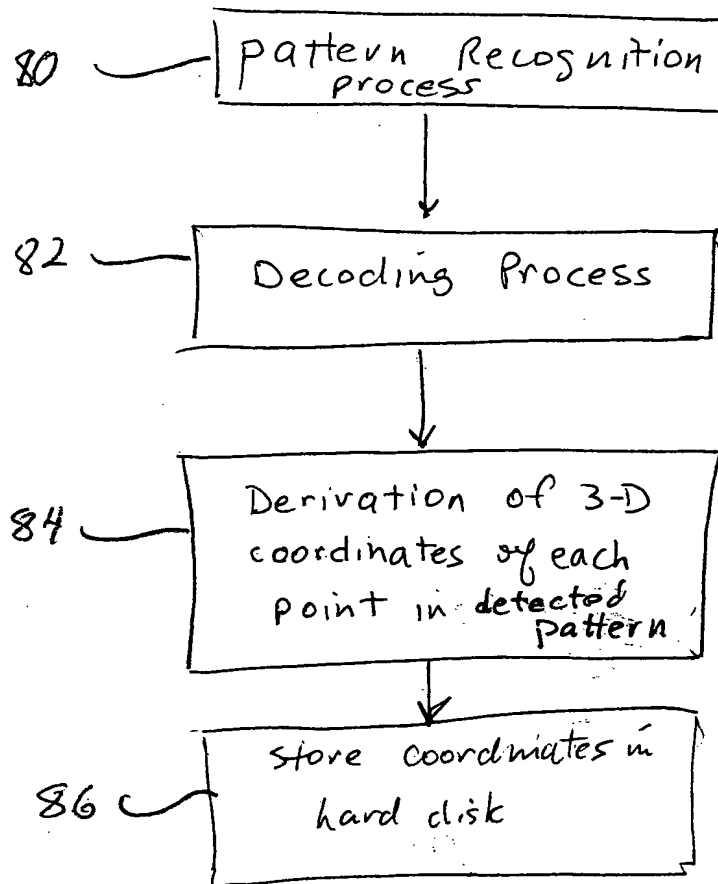


Fig. 6

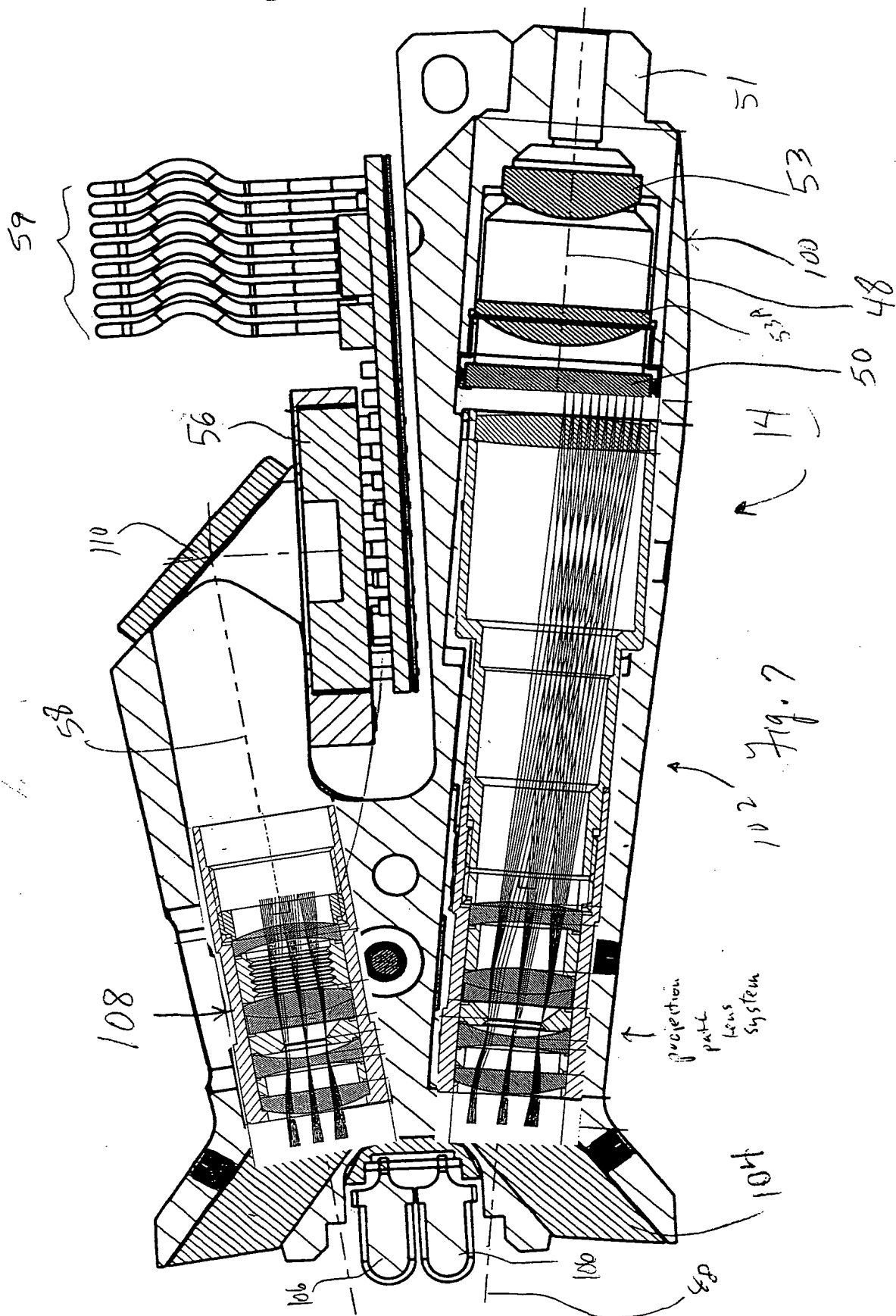
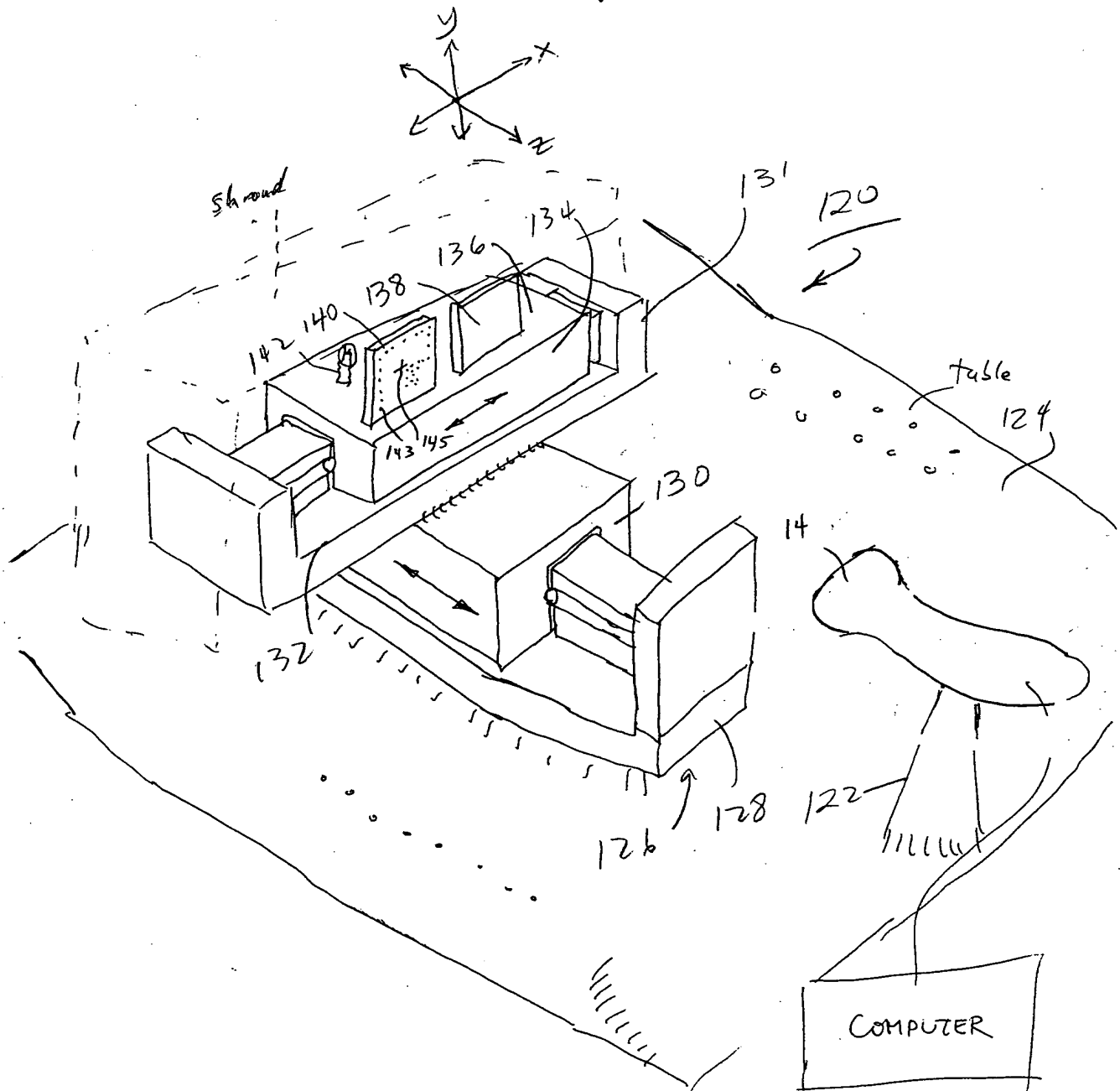


Fig. 8

8.11



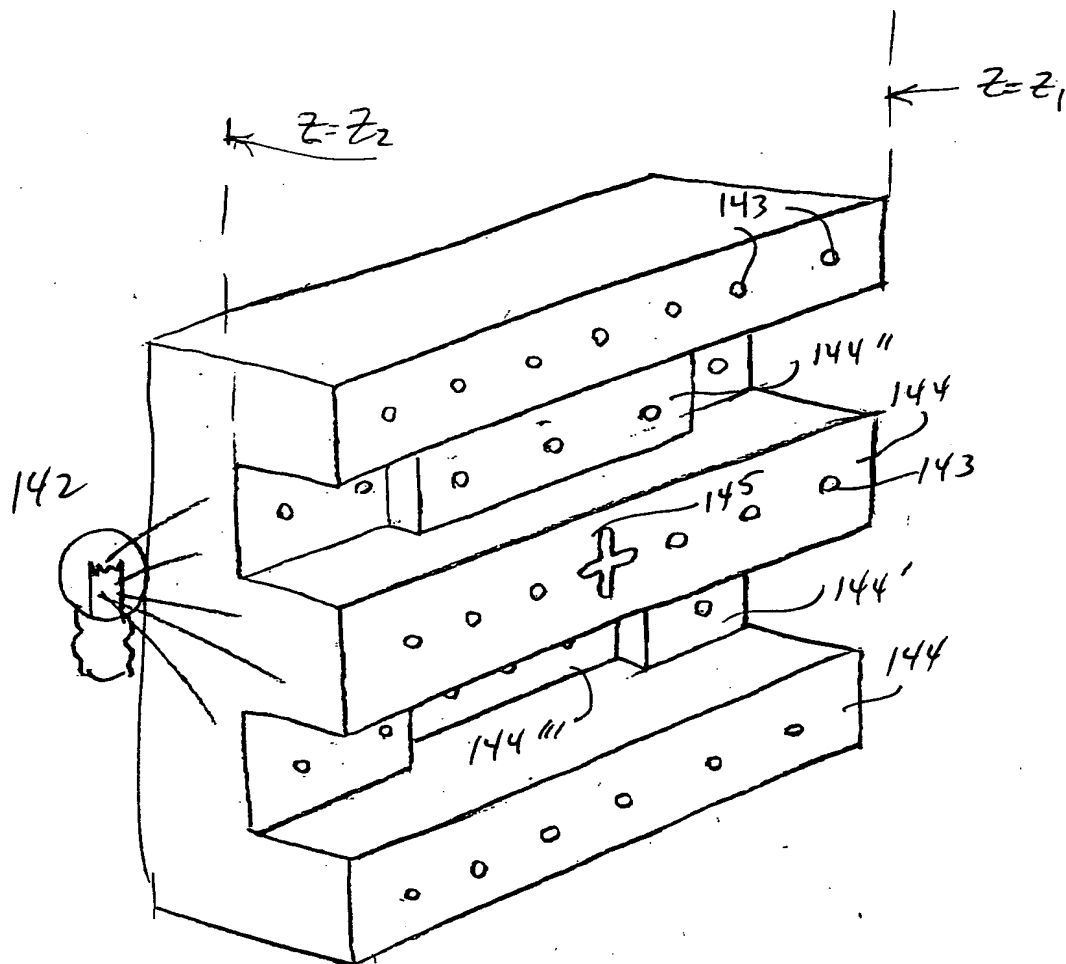


Fig. 8A

Fig. 9

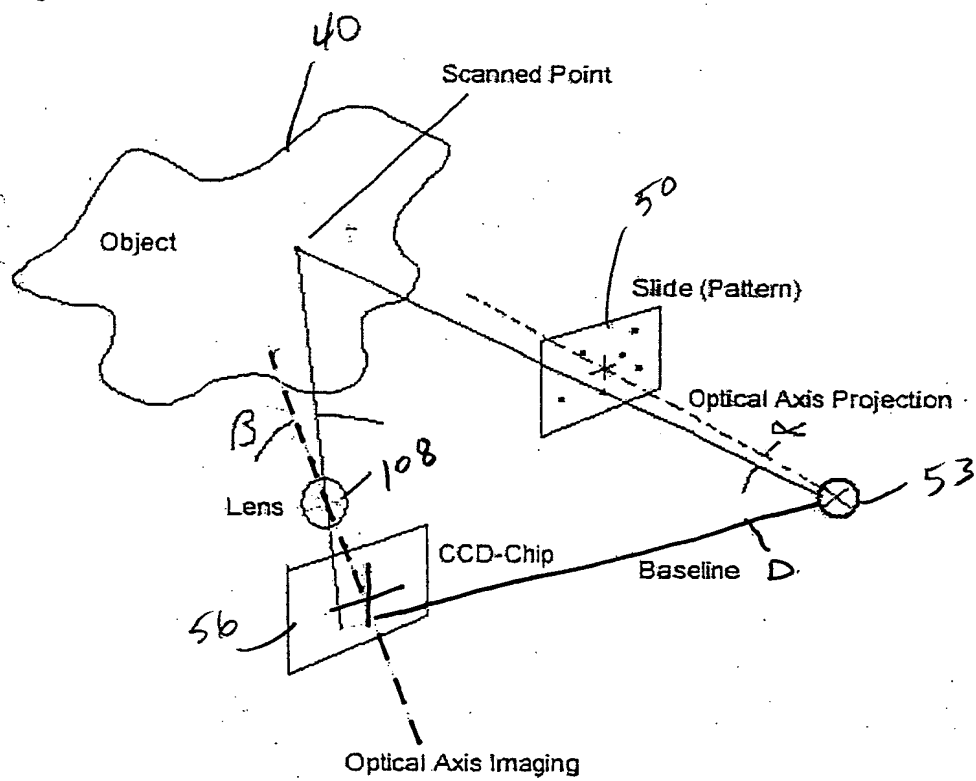


Fig. 9B

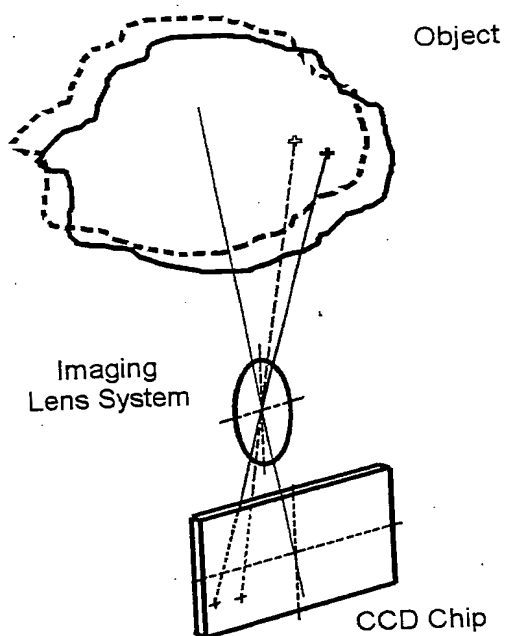
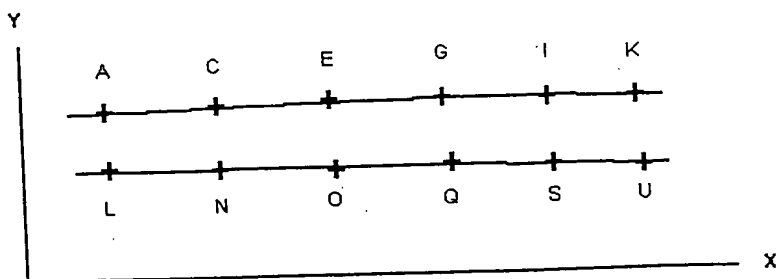
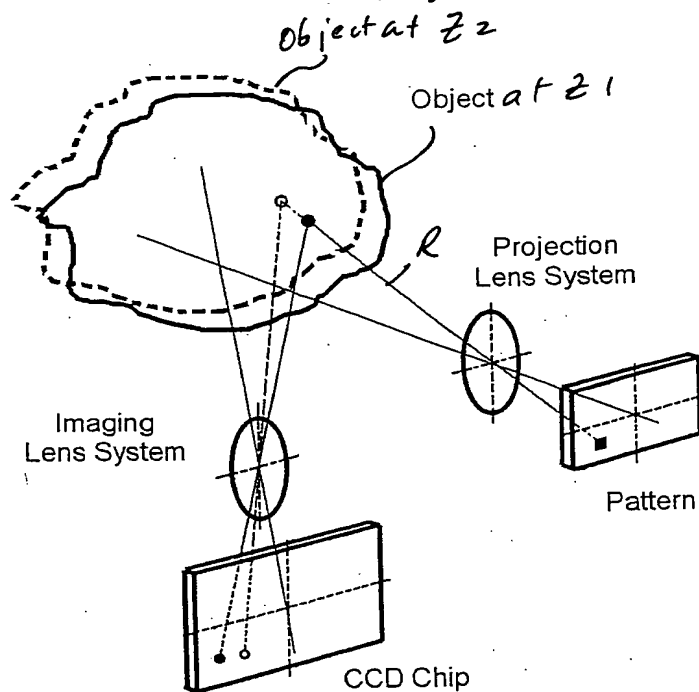


Fig. 9A



Pixel coordinates for portions of the pattern assigned to a certain Z-level

Fig. 9C

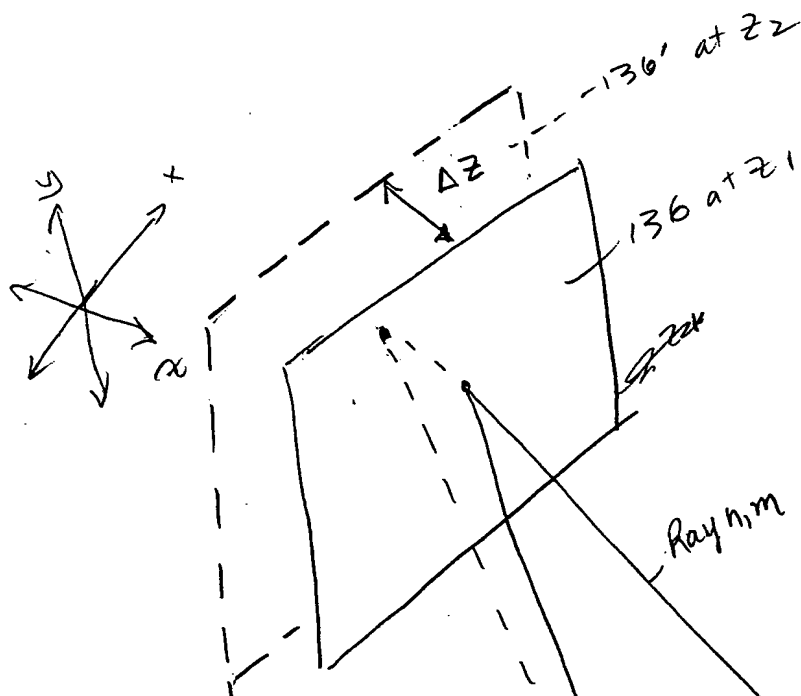


Fig. 10

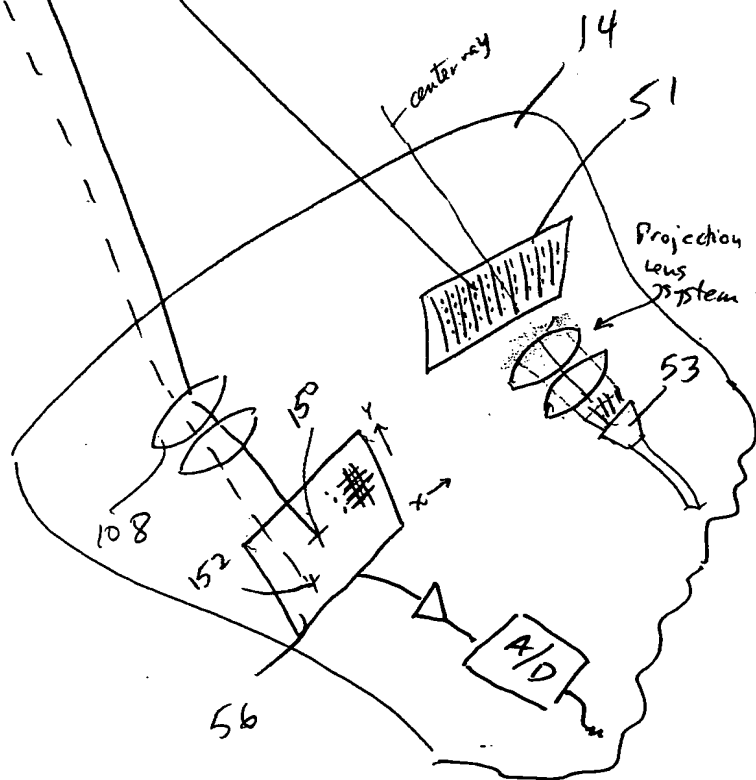


Fig. 17

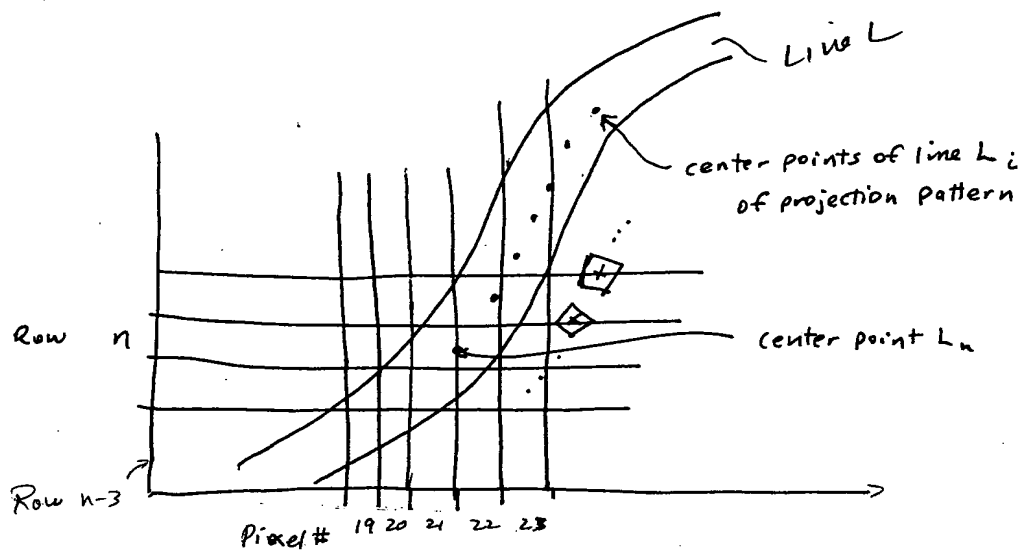
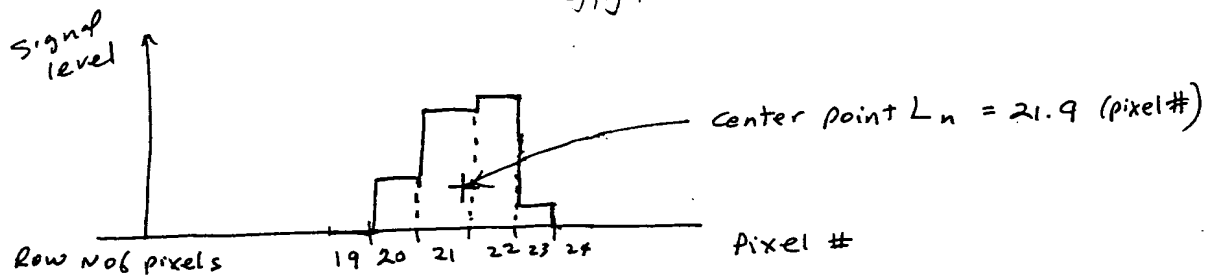


Fig. 18

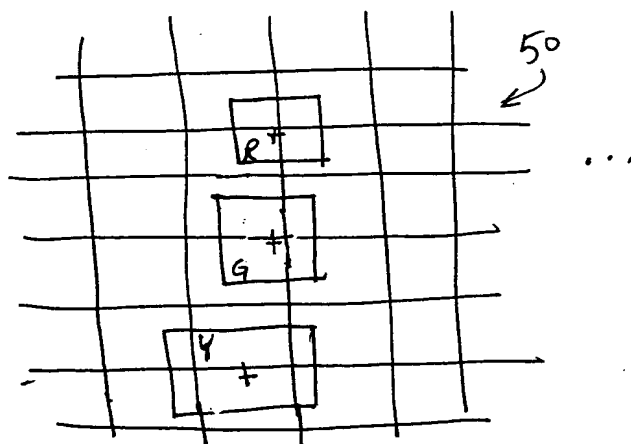


Fig. 19

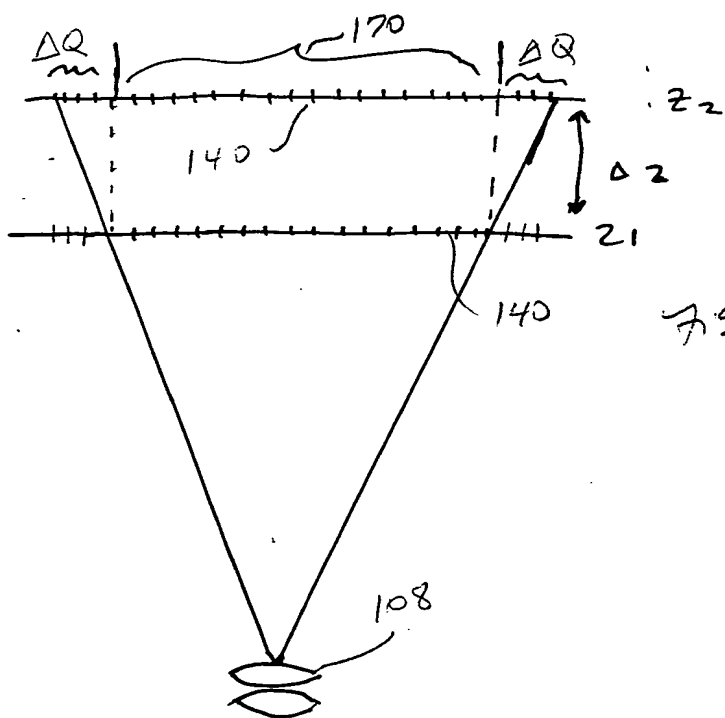
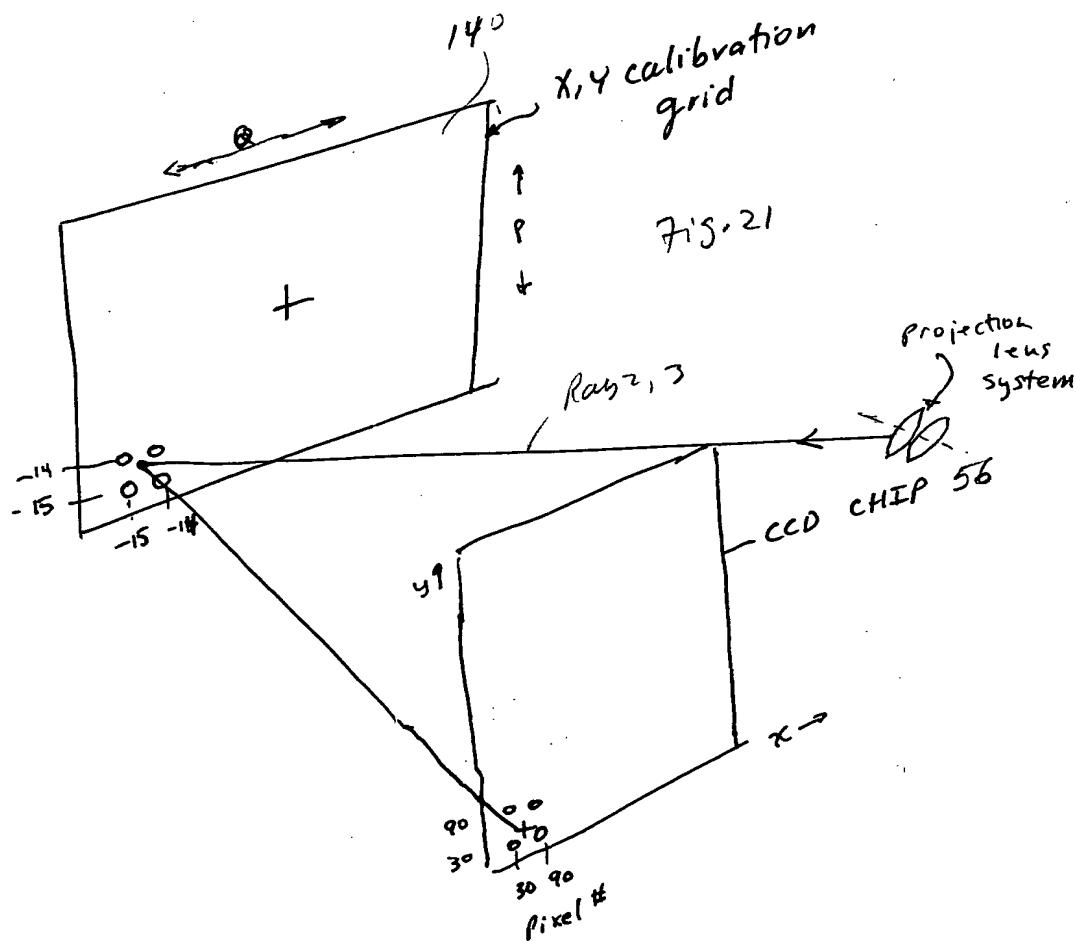


Fig. 20



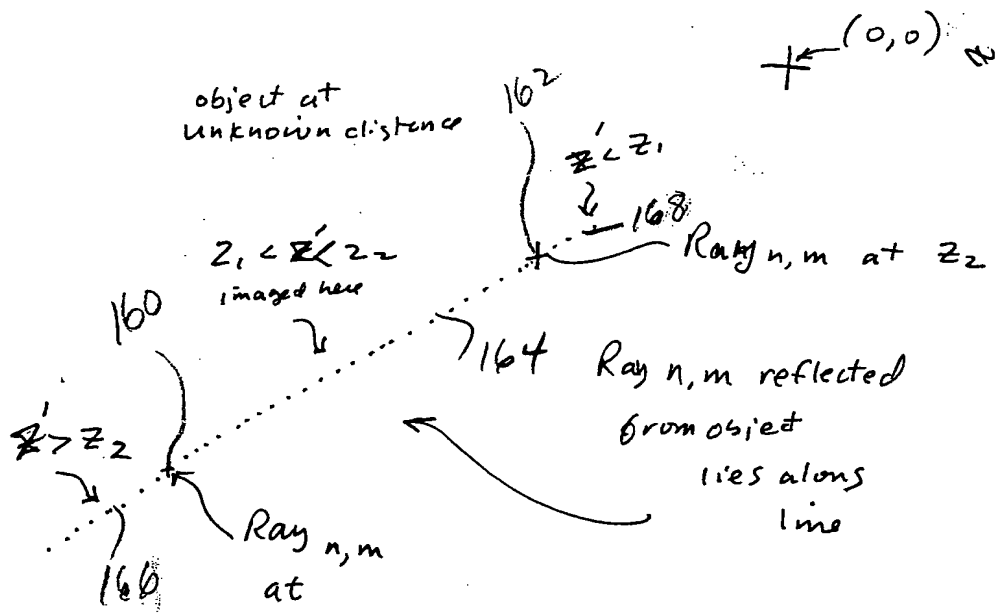
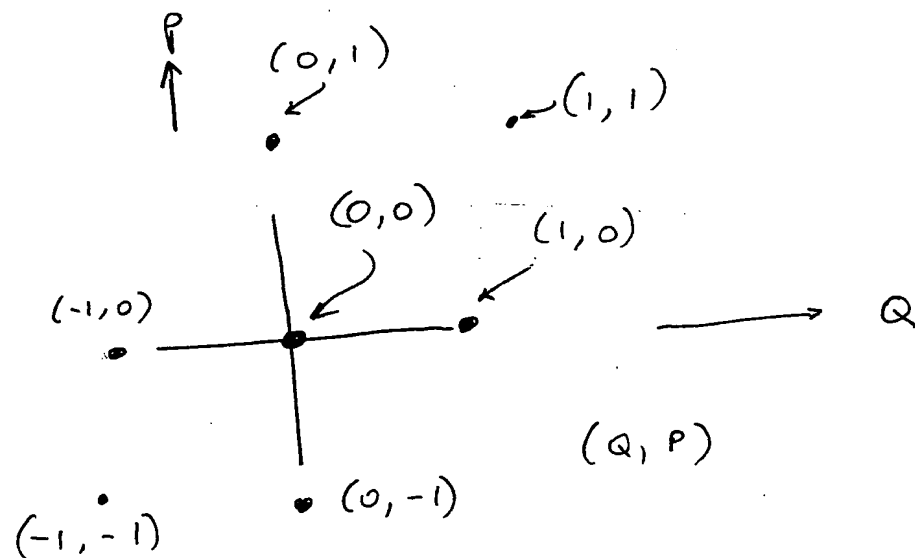


Fig. 22

Fig. 23



CCD x, CCD y = Pixel #, in subpixel resolution

Fig. 24

(before)

Calibration Table #1

	Line 1				Line 2				Line N			
	Row 1	Row 2	Row 3	Row 4	Row M	Row 1	Row 2	Row 3	Row 4	Row M	Row 1	Row 2
CCD x	1.0	1.1	1.5	2.1	...	27.1	29.5	30.2	37.1			
mm Distance												
CCD y	10.2	20.4	32.8	44.5	...	11.5	21.6	36.2	44			
mm Distance												
CCD x	3.9	4.5	6.8	12.2		34.0	41.1	43.0	46			
mm Dist.												
CCD y	12.1	21.5	30.4	46.3		13.2	21.8	31.0	48.2			
mm Dist.												

Z₁

Z₂

Calibration Table #2 (Q, P)

Calibration Table									
Quadrant I					Quadrant II				
Row 0					Row 1				
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		Row										
		(-1,0)	(-2,0)	(-3,0)	(-4,0)	...	$(-\frac{Q}{2}-\Delta Q,0)$...	$(-1, \frac{P}{2})$	$(-2, \frac{P}{2})$...	$(-\frac{Q}{2}, \frac{P}{2})$
		Row 1										
		(-1,1)	(-2,1)	(-3,1)	(-4,1)	...	$(-\frac{Q}{2}, 1)$...	$(-1, \frac{P}{2})$	$(-2, \frac{P}{2})$...	$(-\frac{Q}{2}, \frac{P}{2})$
Z_1	CCD _x											
	CCD _y											
Z_2	CCD _x											
	CCD _y											

Quadrant III

Z ₁	CCD _X	(-1, -1)	(-2, -1)	...
	CCD _Y			
Z ₂	CCD _X			
	CCD _Y			

Quadrant IV

Z ₁	CCD _X	(0, -1)	(1, -1)	...
	CCD _Y			
Z ₂	CCD _X			
	CCD _Y			

CCD X, CCD Y = Pixel #, in subpixel resolution

Fig. 26

(after)

Calibration Table #1

Pattern		Line 1				Line 2				Line N			
		Row 1	Row 2	Row 3	Row 4	Row 1	Row 2	Row 3	Row 4	Row 1	Row 2	Row 3	Row 4
Z ₁	CCD X	1.0	1.1	1.5	2.1	...	27.1	29.5	30.2	37.1			
	mm Distance								-14.6				
	CCD Y	10.2	20.4	32.8	44.5	...	11.5	21.6	36.2	44			
	mm Distance								-14.4				
Z ₂	CCD X	3.9	4.5	6.8	12.2	...	34.0	41.1	43.0	46			
	mm Distance								-14.8				
	CCD Y	12.1	21.5	30.4	46.3	...	13.2	21.8	31.0	48.2			
	mm Distance								-15.8				

after

A high-contrast, black and white image of a person's face, heavily distorted by horizontal wavy lines, suggesting a digital or optical illusion effect. The image is characterized by a dense pattern of horizontal lines that ripple and undulate across the entire face, creating a sense of movement and distortion. The background is dark and textured, with some faint, illegible text visible on the right side. The overall effect is one of a digital glitch or a visual illusion that warps the features of the person's face.

A high-contrast, black and white graphic of a human head in profile, facing right. The head is composed of a dense, wavy pattern of horizontal lines, giving it a textured, almost woven appearance. The background is solid black.

7.5.2.8



FIG. 29

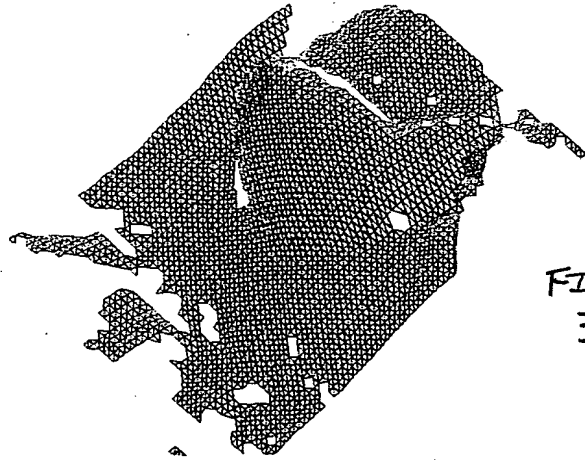


FIG.
30

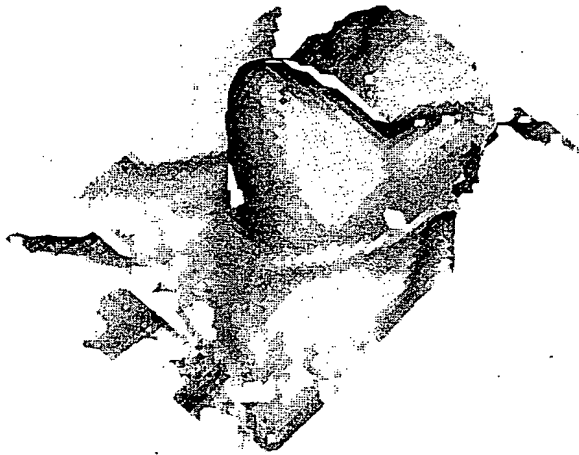


FIG. 31



FIG. 32

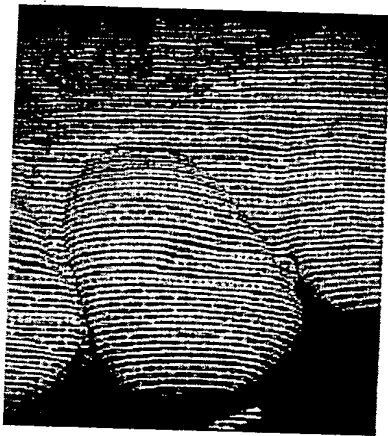


FIG. 33



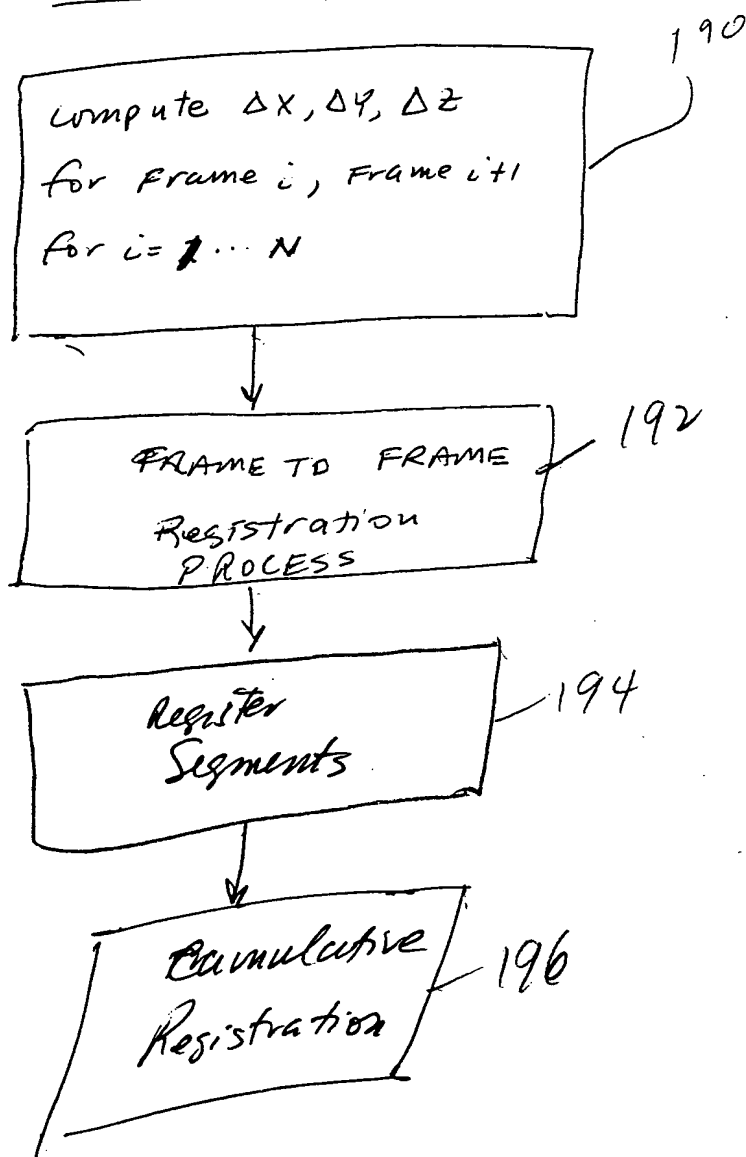
FIG. 34



FIG.
35

Fig. 36

Registration



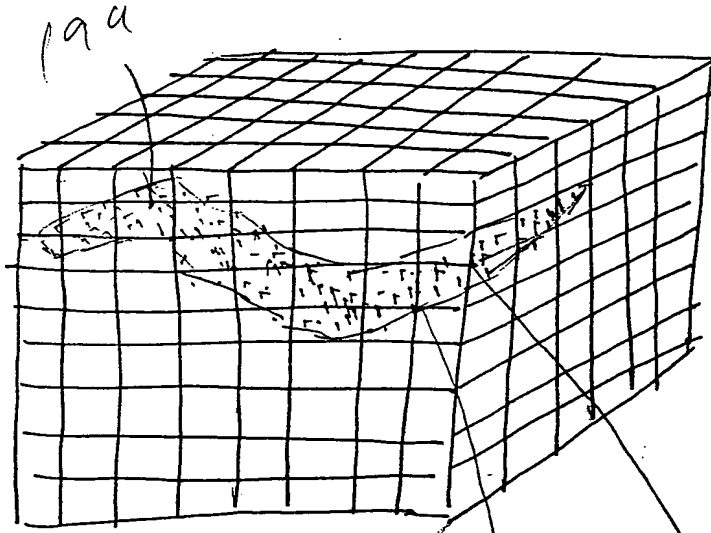
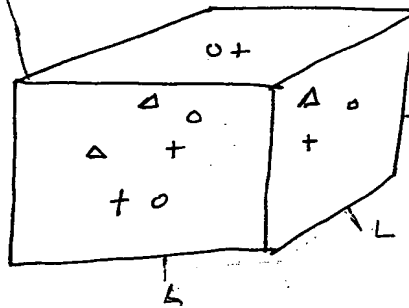


Fig. 37A

Fig.
37B



$L = 1.0 \text{ mm}$

Δ = points of frame i
 $+$ = points of frame $i+1$
 o = points of frame $i+2$

20040924 14:44:00

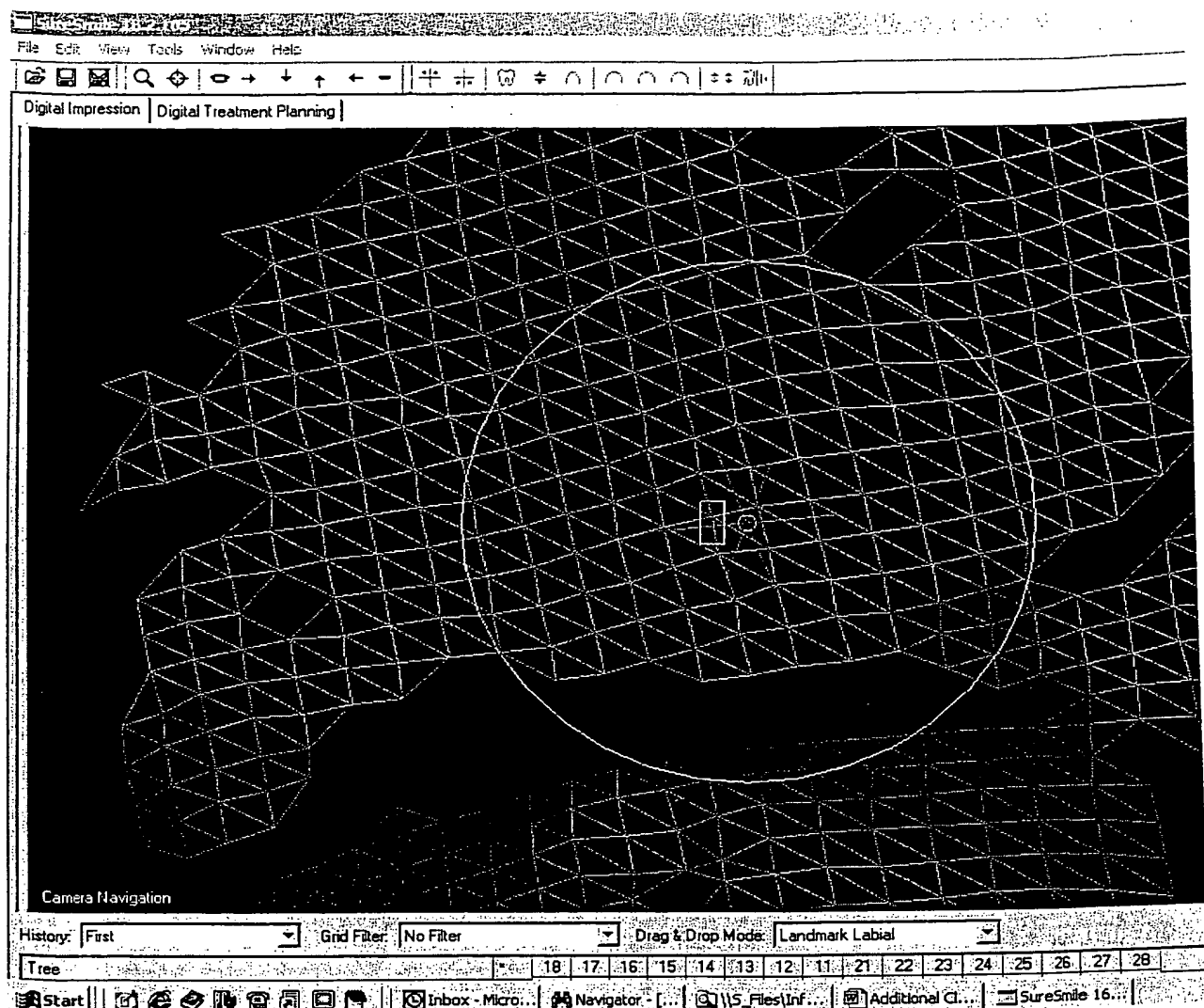
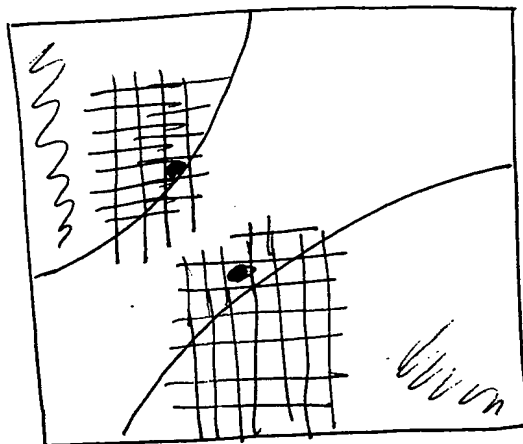


Figure 37c



Frame i
Fig. 38A

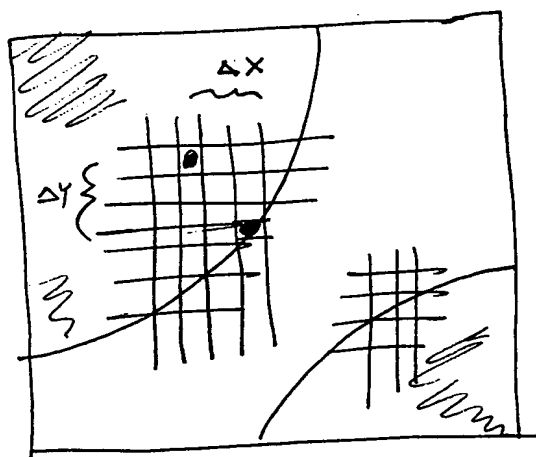


Fig. 38B
Frame i+1

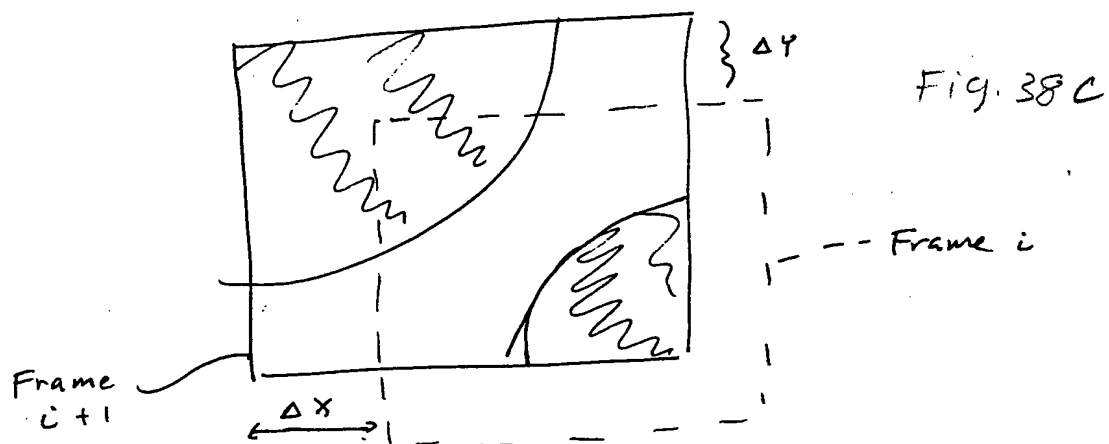
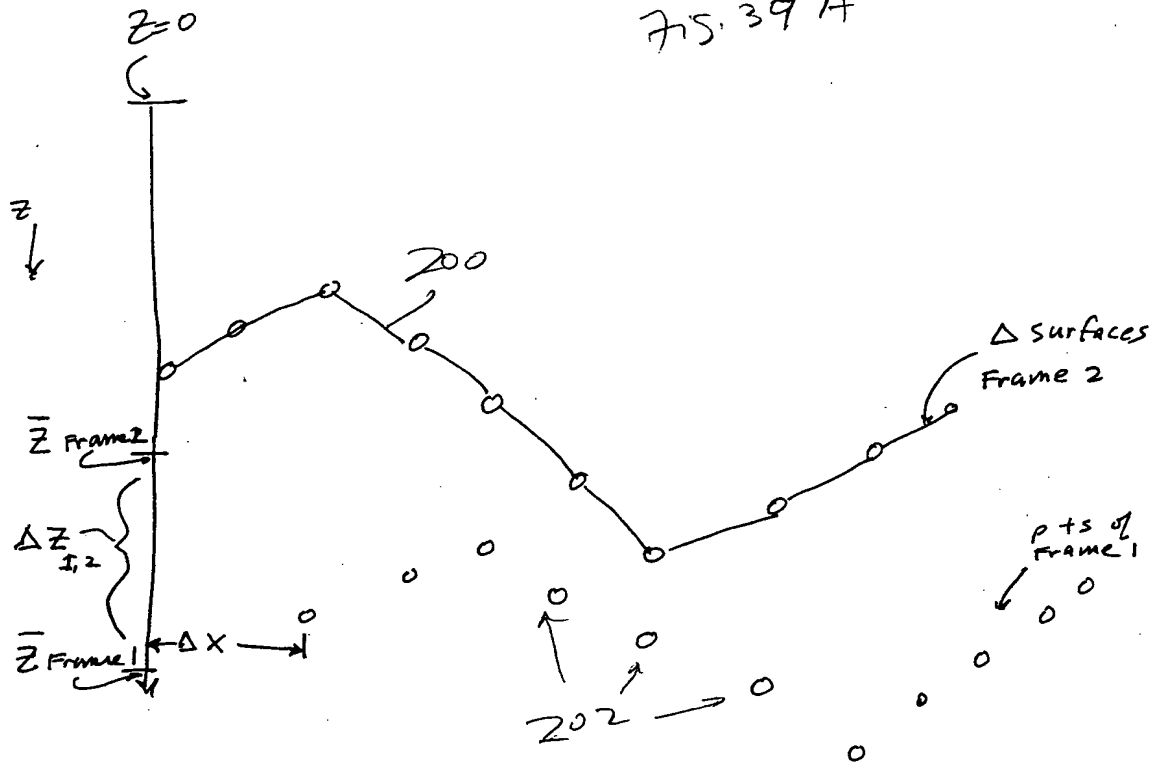
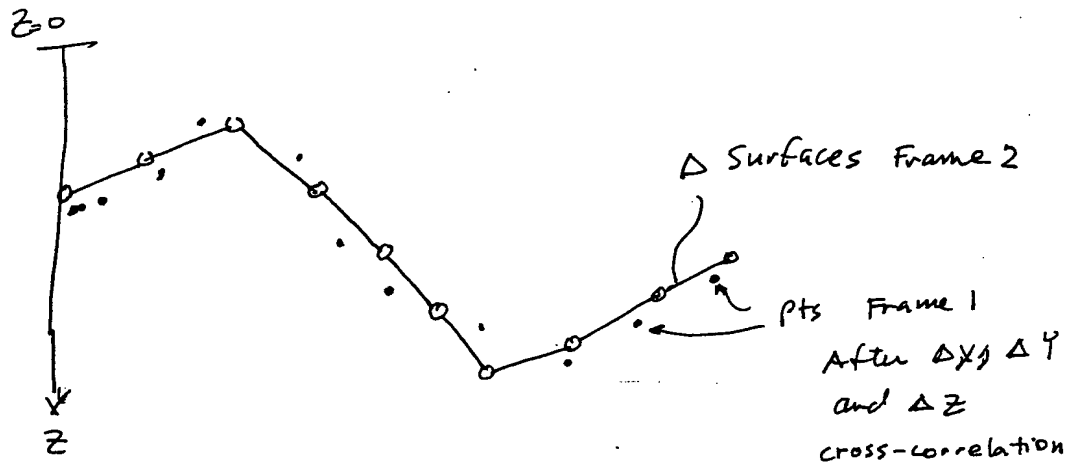


Fig. 38C

715.39 A



715.39 B



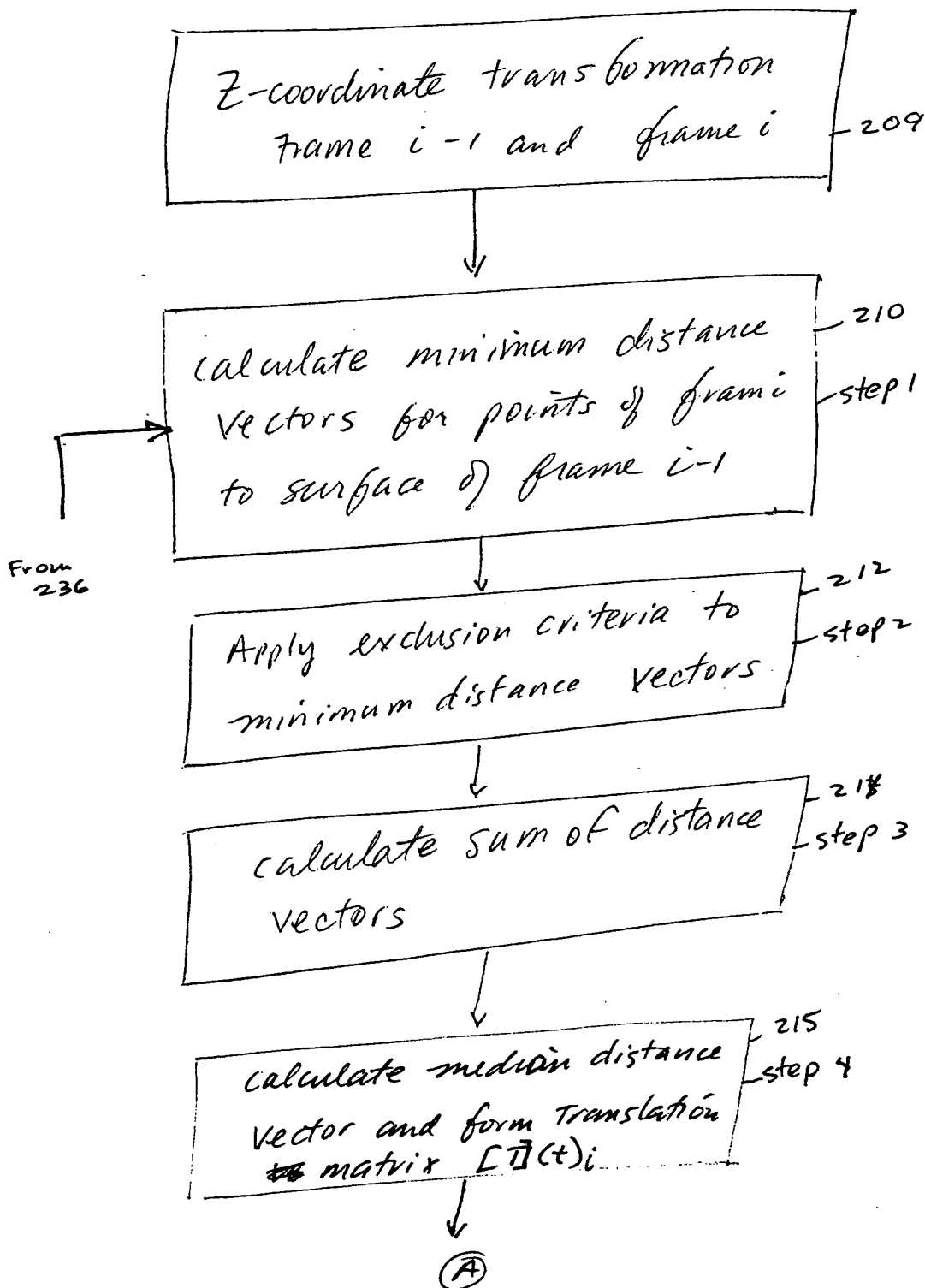
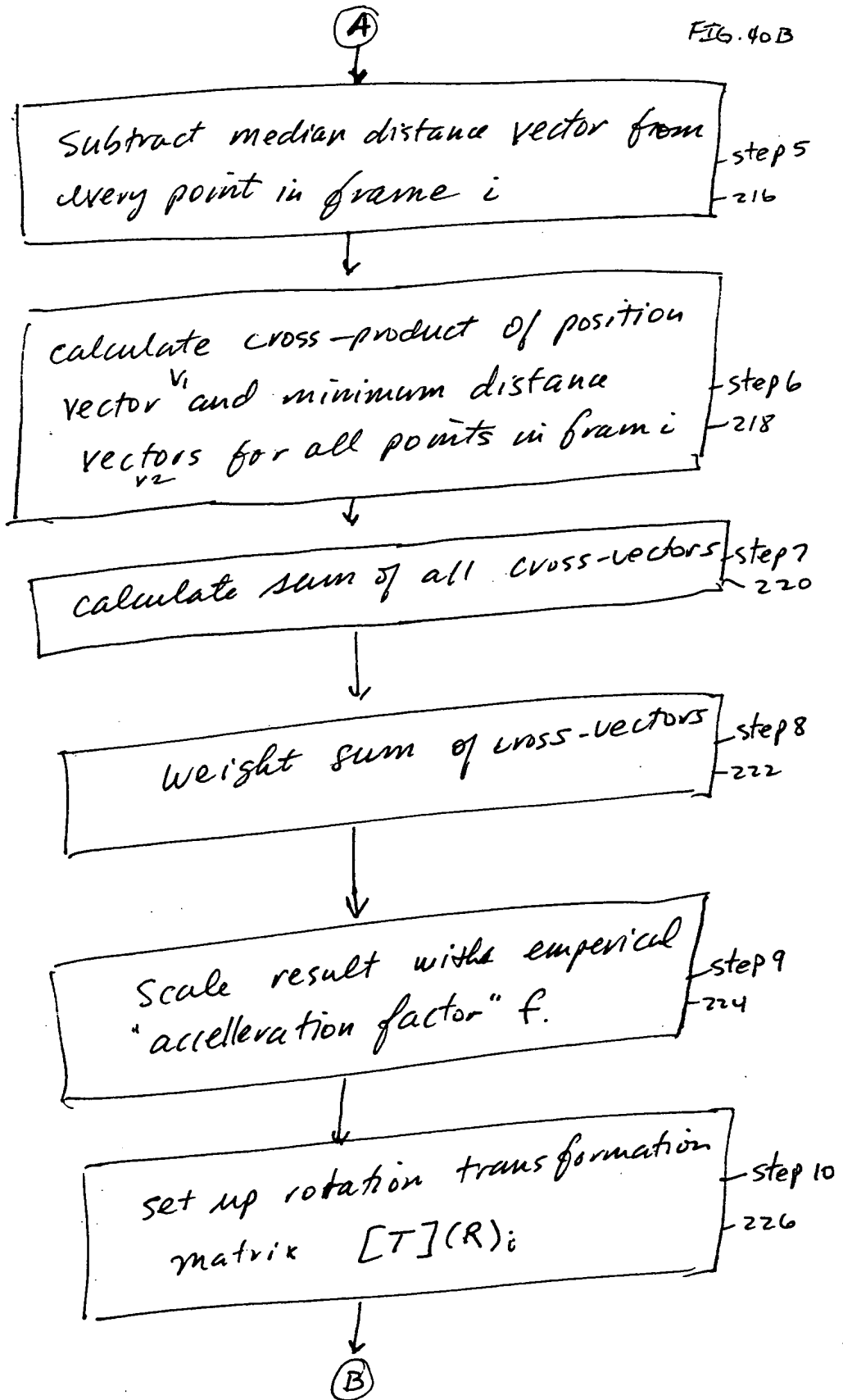
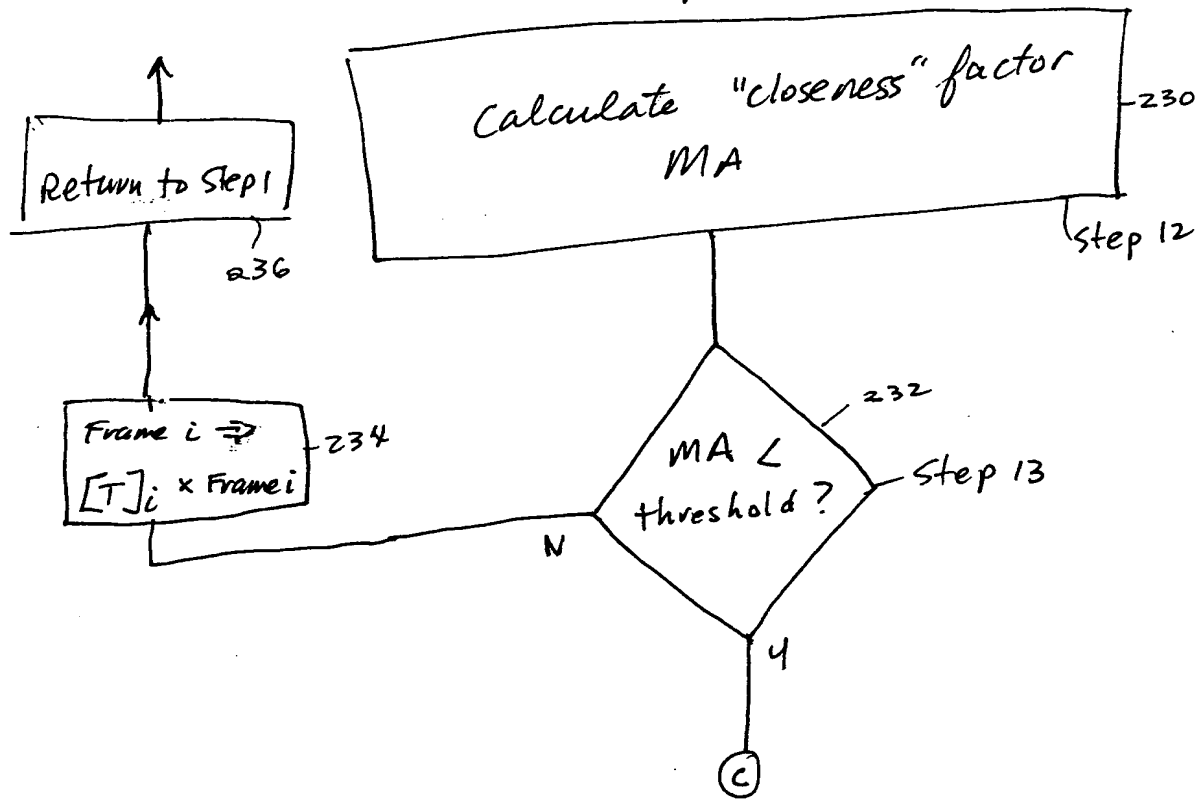
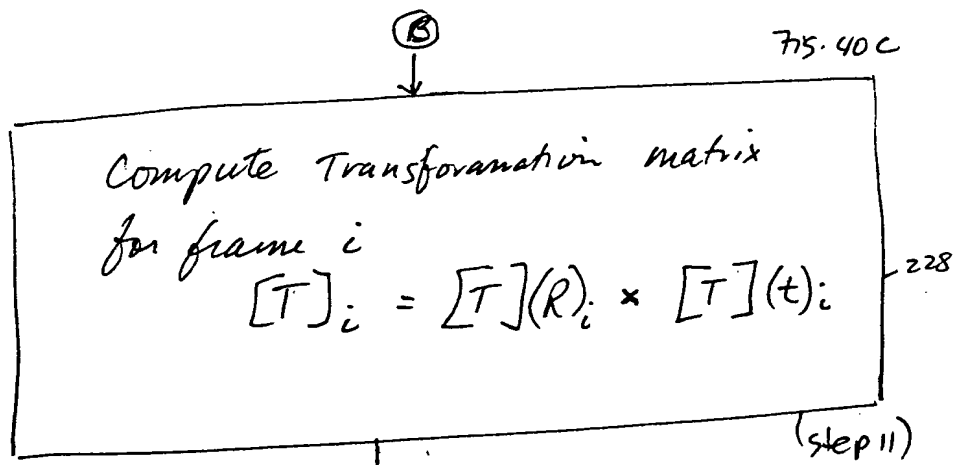


FIG. 40B





Frame to
Frame
registration

Fig. 40 D

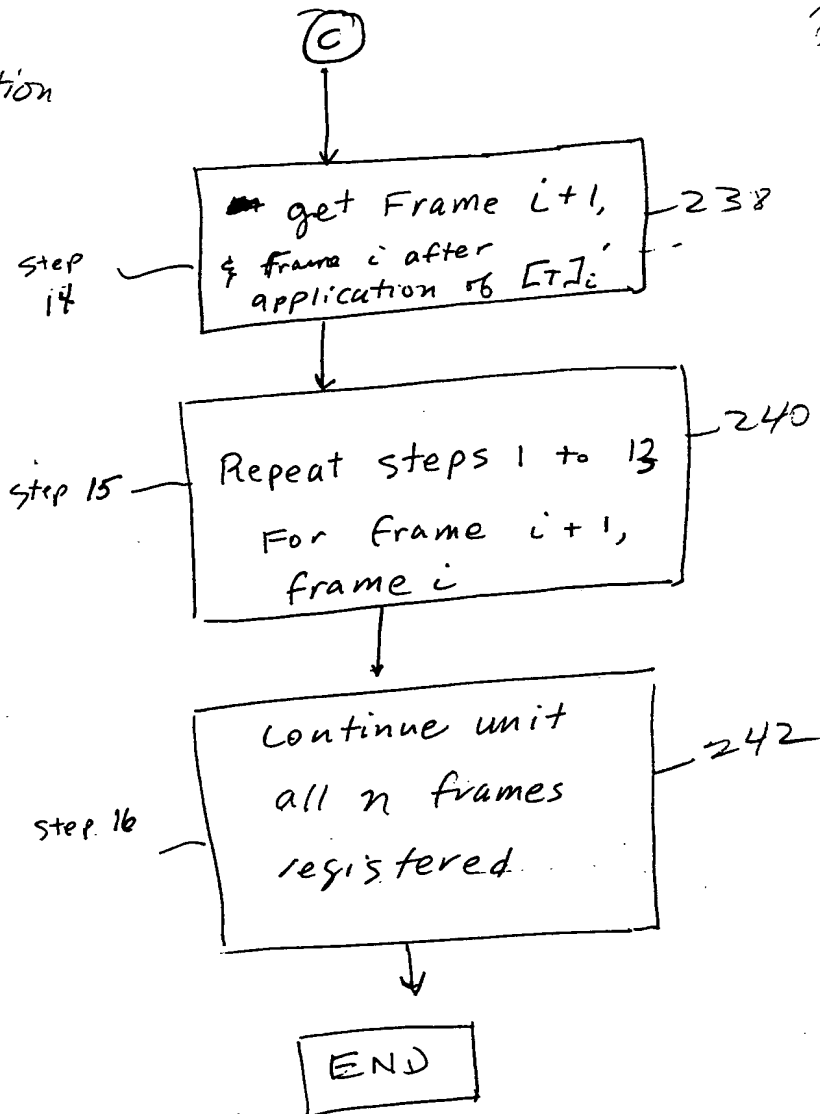


Fig. 41

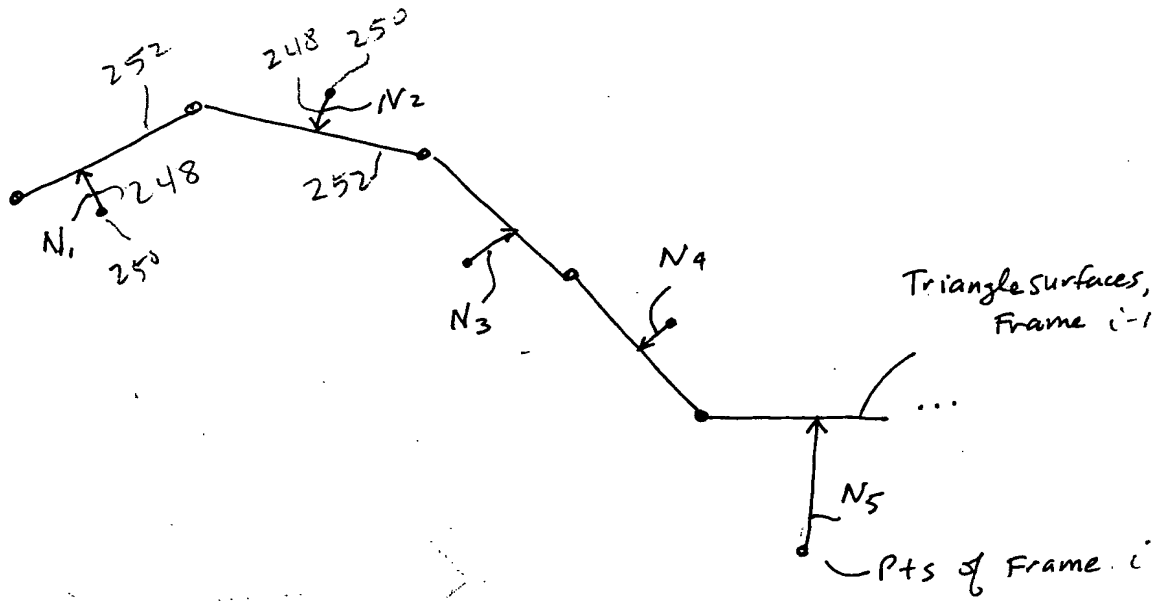


Fig. 42

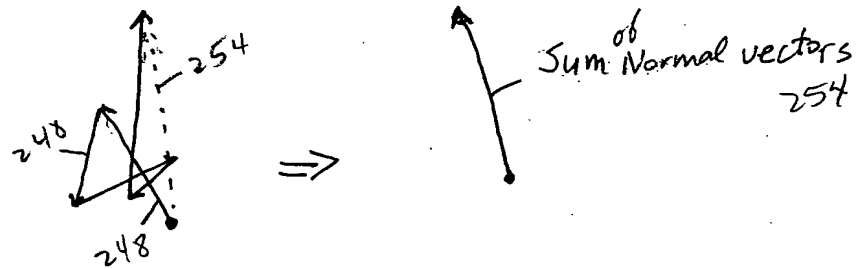


FIG. 43

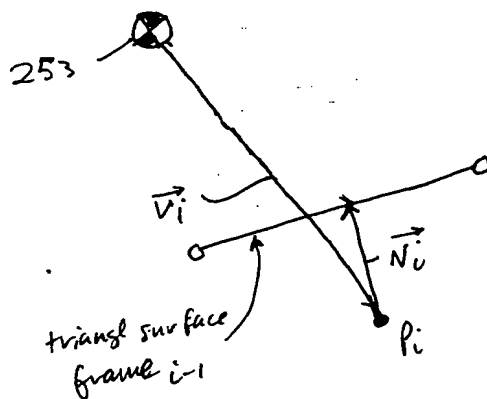
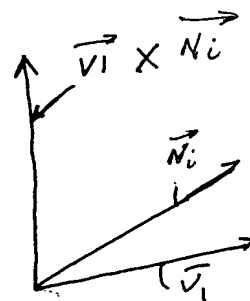


FIG. 44



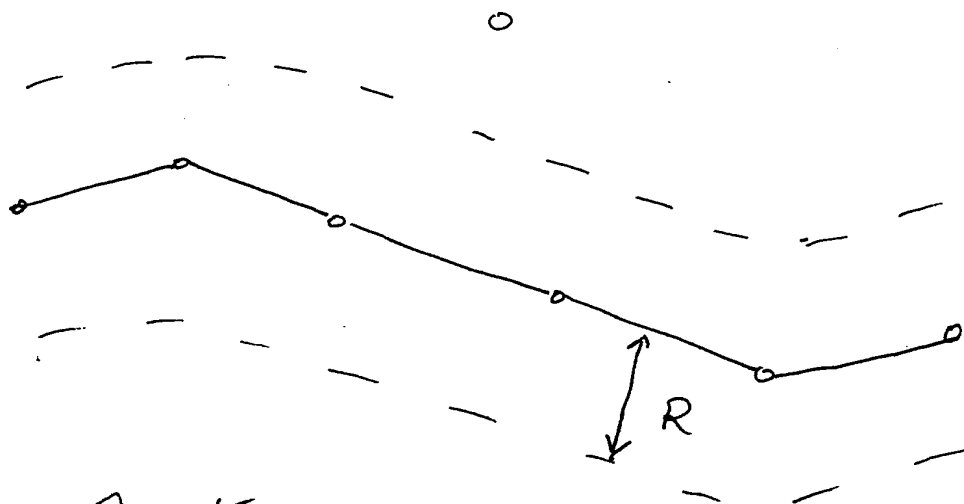


Fig. 45

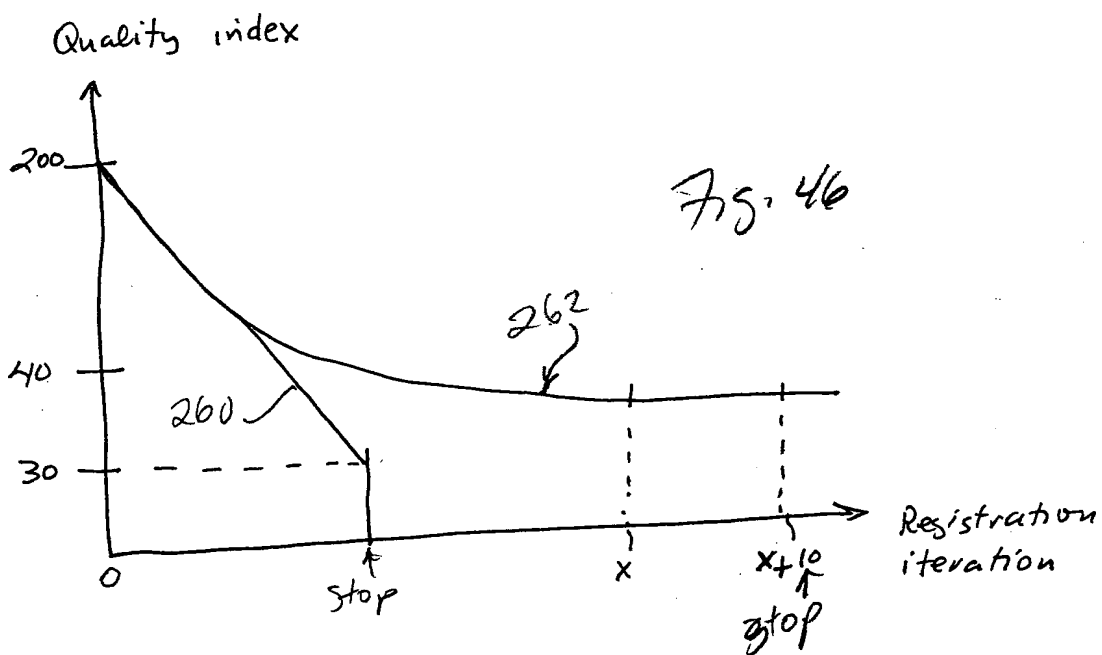


Fig. 46

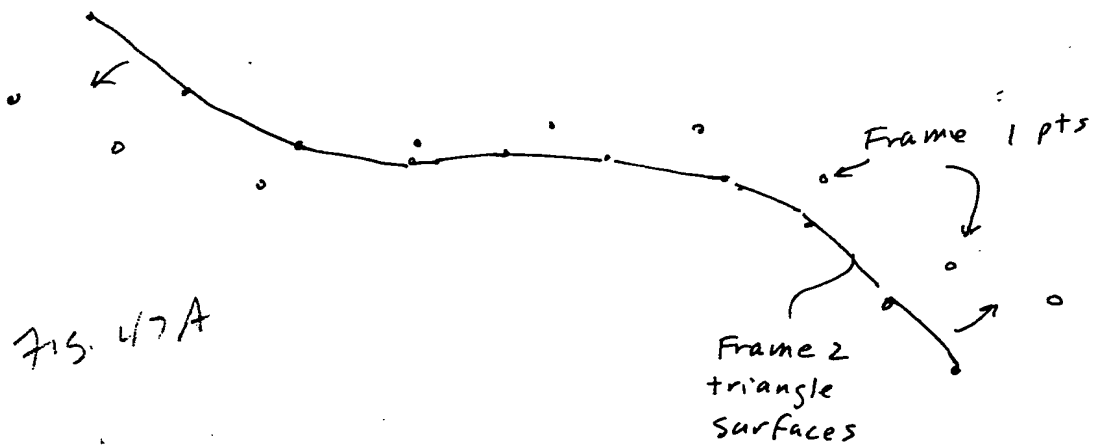


Fig. 47A

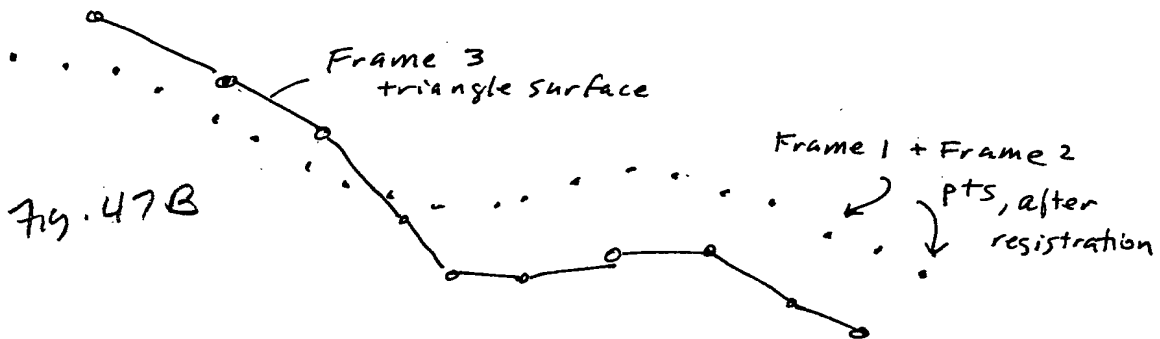
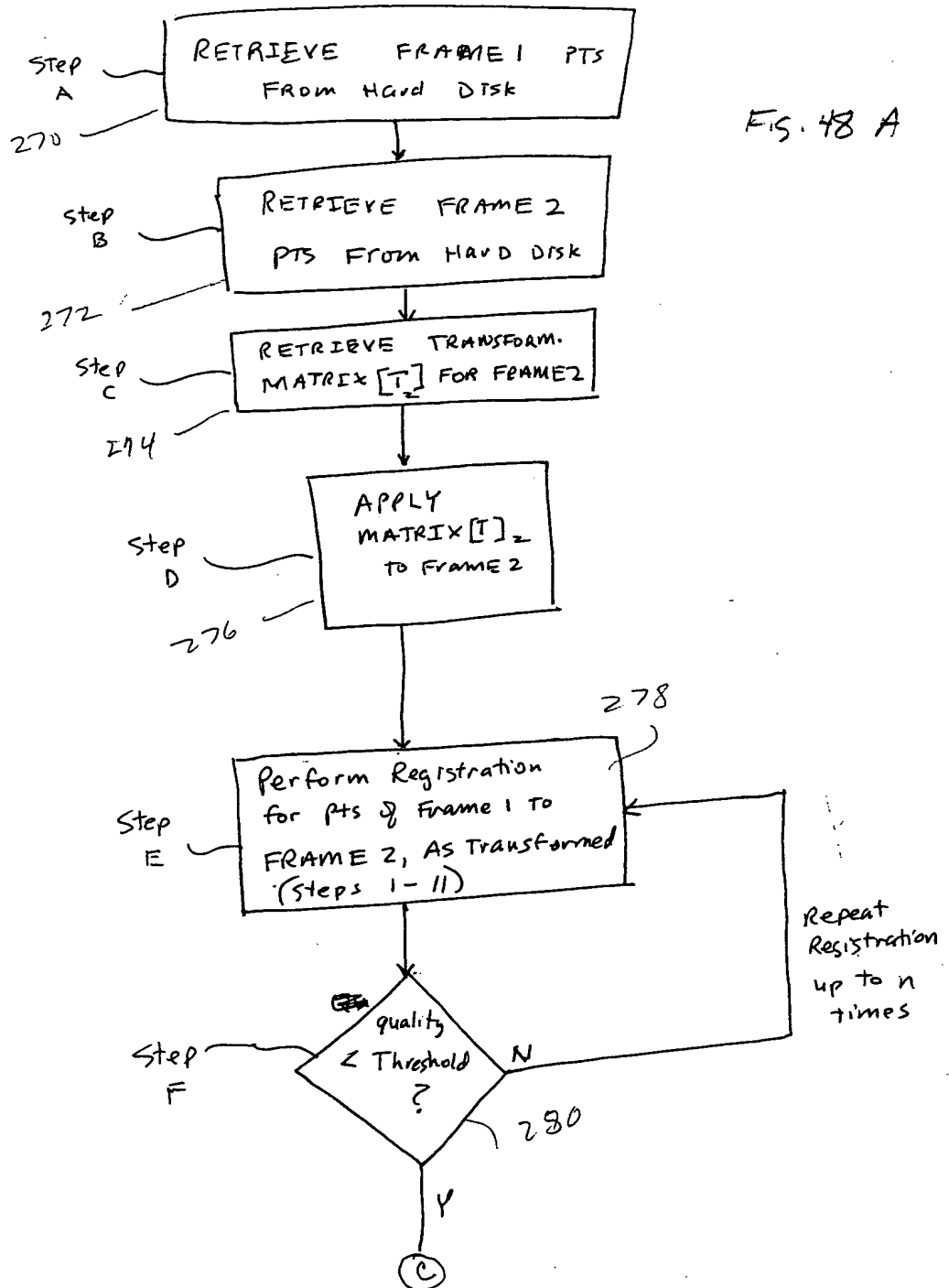
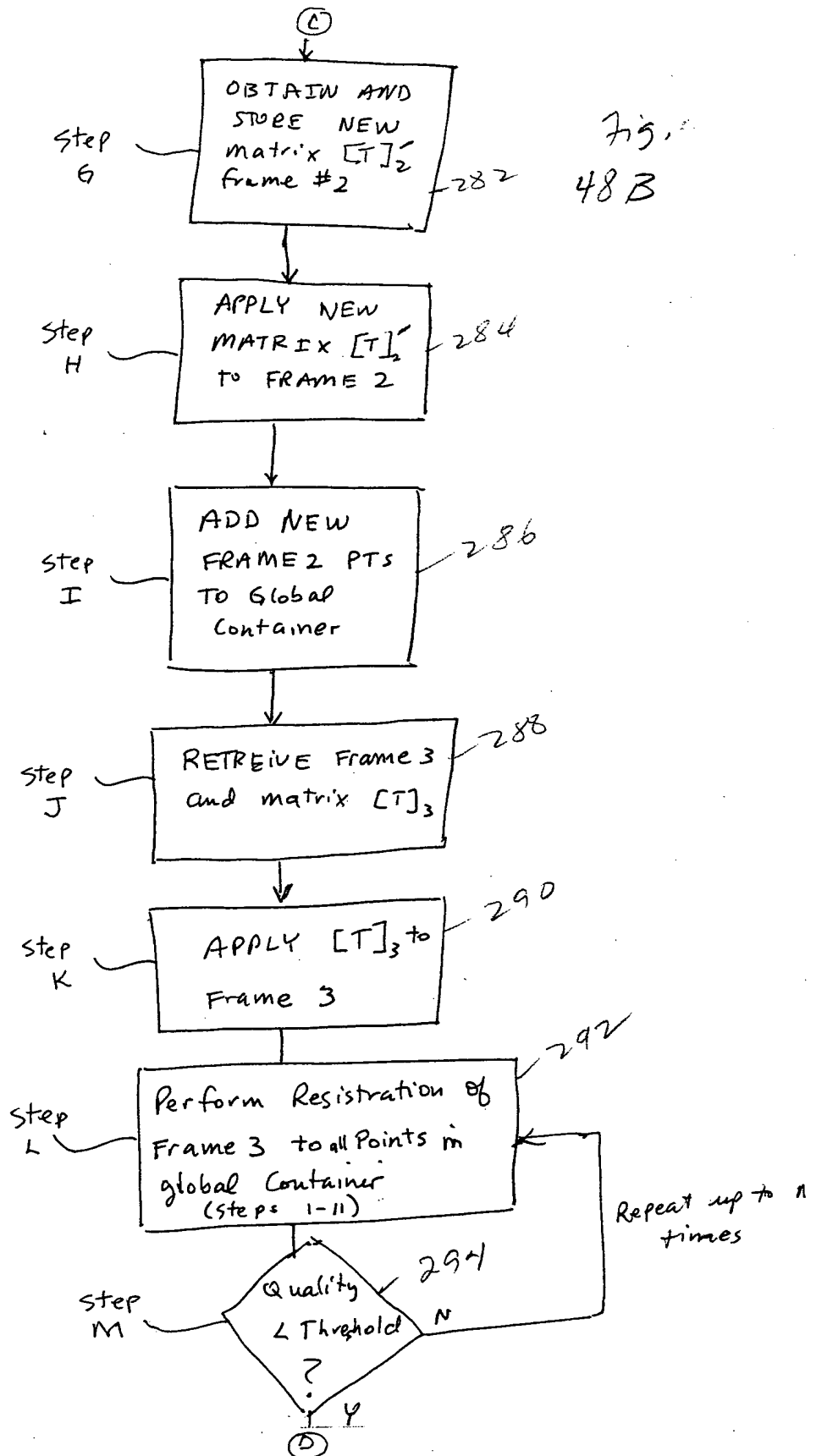


Fig. 47B

Cumulative
Registration



Cumulative
registration



Cumulative
registration

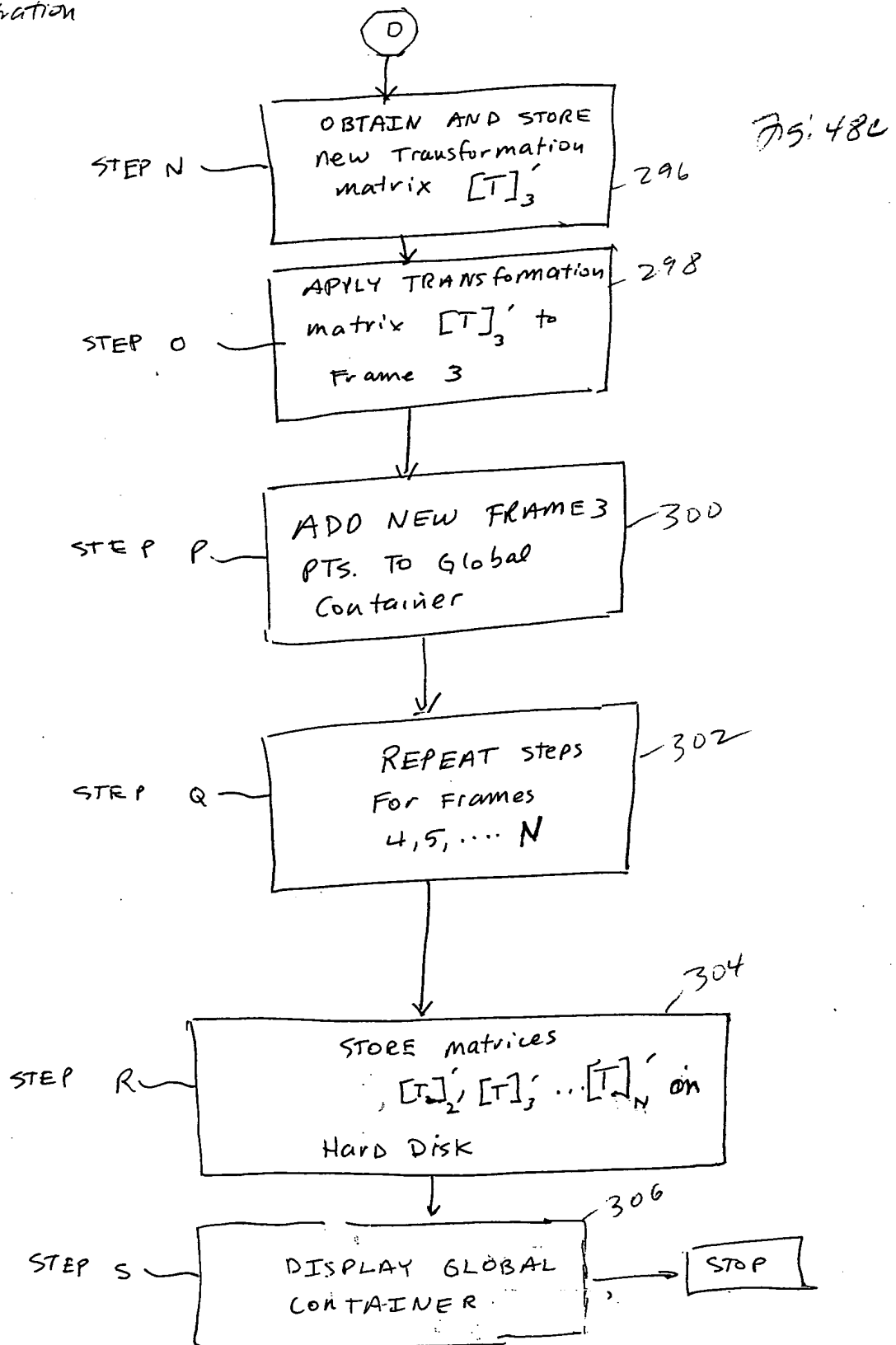


Fig. 49

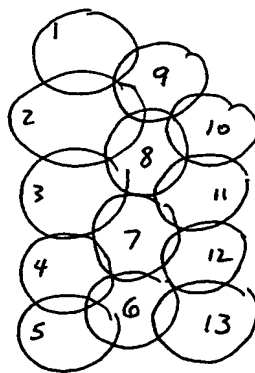
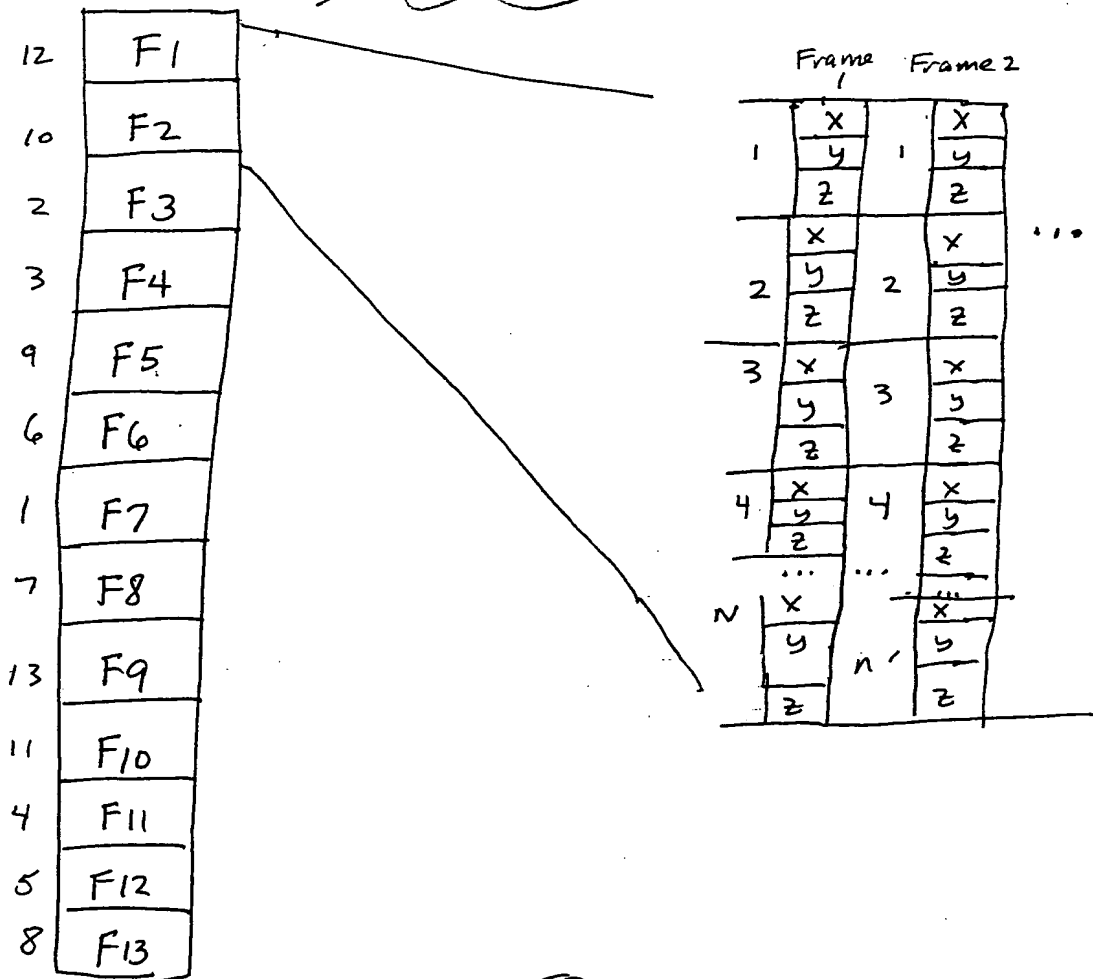


Fig. 50

Fig. 51

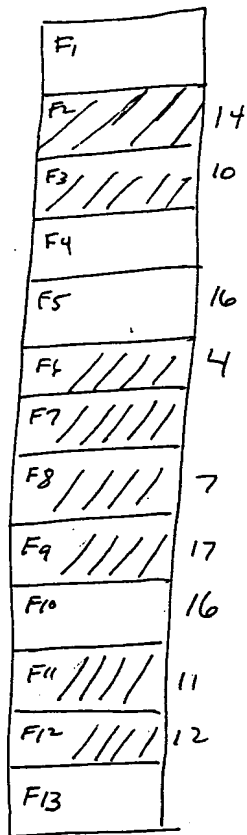


Fig. 52

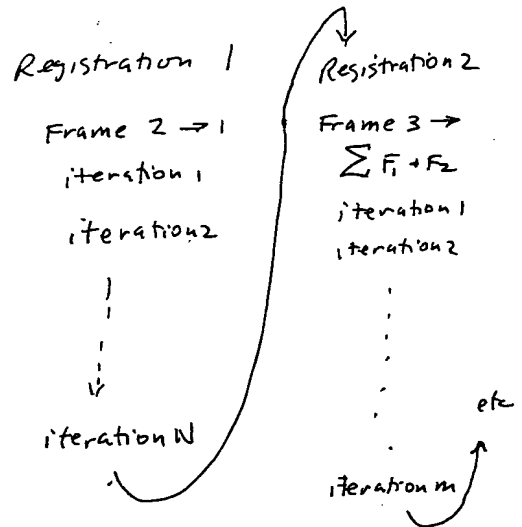


Fig. 53

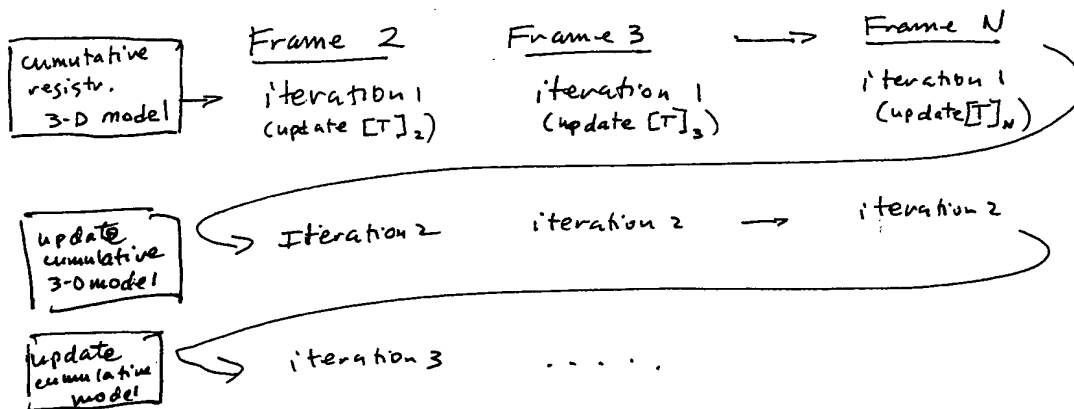


FIG. 54

<input checked="" type="radio"/> Single <input type="radio"/> Cumulative				<table border="1"> <tr> <td>X</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> </tr> <tr> <td>Y</td> <td>3.00</td> <td>0.00</td> <td>0.00</td> </tr> <tr> <td>Z</td> <td>-3.00</td> <td>0.00</td> <td>0.00</td> </tr> <tr> <td></td> <td>0.00</td> <td>3.00</td> <td>0.00</td> </tr> <tr> <td></td> <td>0.00</td> <td>-3.00</td> <td>0.00</td> </tr> </table>				X	0.00	0.00	0.00	Y	3.00	0.00	0.00	Z	-3.00	0.00	0.00		0.00	3.00	0.00		0.00	-3.00	0.00	<table border="1"> <tr> <td>Distance limit (SYX)</td> <td>250.000 y</td> </tr> <tr> <td>Stationary count</td> <td>5</td> </tr> <tr> <td>Radius (SYX)</td> <td>2.000 mm</td> </tr> <tr> <td>Convergence factor</td> <td>0.100</td> </tr> <tr> <td>Number of points to register</td> <td>400</td> </tr> <tr> <td>Accelerate factor</td> <td>1.6</td> </tr> </table>				Distance limit (SYX)	250.000 y	Stationary count	5	Radius (SYX)	2.000 mm	Convergence factor	0.100	Number of points to register	400	Accelerate factor	1.6	<table border="1"> <tr> <td>Maximal iteration count</td> <td>400</td> </tr> <tr> <td>Overlap size</td> <td>6.000</td> </tr> <tr> <td>Minimum quote of active points (0-1)</td> <td>0.200</td> </tr> <tr> <td>Maximal triangle size (larger triangles are treated as gaps)</td> <td>0.500</td> </tr> <tr> <td>Maximal edge length (longer edges have no attraction)</td> <td>1.800 mm</td> </tr> <tr> <td>Maximal count of unsuccessful files (new segment is started when exceeded)</td> <td>2</td> </tr> <tr> <td>Form factor: Proportion of point distance and element size (≥ 0)</td> <td>0.1</td> </tr> </table>				Maximal iteration count	400	Overlap size	6.000	Minimum quote of active points (0-1)	0.200	Maximal triangle size (larger triangles are treated as gaps)	0.500	Maximal edge length (longer edges have no attraction)	1.800 mm	Maximal count of unsuccessful files (new segment is started when exceeded)	2	Form factor: Proportion of point distance and element size (≥ 0)	0.1	<table border="1"> <tr> <td>Distance limit (SYX)</td> <td>50.000 y</td> </tr> <tr> <td>Final distance</td> <td>40.000 y</td> </tr> <tr> <td>Stationary count</td> <td>10</td> </tr> <tr> <td>Radius (SYX)</td> <td>0.500 mm</td> </tr> <tr> <td>Convergence factor</td> <td>0.010</td> </tr> <tr> <td>Number of points to register</td> <td>400</td> </tr> <tr> <td>Accelerate factor</td> <td>1.3</td> </tr> </table>				Distance limit (SYX)	50.000 y	Final distance	40.000 y	Stationary count	10	Radius (SYX)	0.500 mm	Convergence factor	0.010	Number of points to register	400	Accelerate factor	1.3
X	0.00	0.00	0.00																																																																												
Y	3.00	0.00	0.00																																																																												
Z	-3.00	0.00	0.00																																																																												
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<table border="1"> <tr> <td>Merging</td> <td></td> </tr> <tr> <td>Radius of sphere inside which is to replace</td> <td>0.500 mm</td> </tr> <tr> <td>Maximal count of edge lines for closing gaps</td> <td>16</td> </tr> </table>				Merging		Radius of sphere inside which is to replace	0.500 mm	Maximal count of edge lines for closing gaps	16	<table border="1"> <tr> <td>Minimal triangle plane size for closing gaps</td> <td>0.010</td> </tr> <tr> <td>Maximal edge length for closing gaps</td> <td>1.500 mm</td> </tr> </table>				Minimal triangle plane size for closing gaps	0.010	Maximal edge length for closing gaps	1.500 mm	<table border="1"> <tr> <td>Minimal distance from point of base quantity</td> <td>0.400 mm</td> </tr> <tr> <td>Maximal distance from edge of base quantity</td> <td>0.000 mm</td> </tr> </table>				Minimal distance from point of base quantity	0.400 mm	Maximal distance from edge of base quantity	0.000 mm																																																						
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Maximal distance from edge of base quantity	0.000 mm																																																																														

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(3) 901ms Nr. 24: n=381 $\bar{U}=0.86$ MA=51.833y R=0.500
 (3) 921ms Nr. 25: n=380 $\bar{U}=0.86$ MA=45.213y R=0.500
 (3) 941ms Nr. 26: n=378 $\bar{U}=0.85$ MA=39.953y R=0.500
 (3) 971ms Nr. 27: n=378 $\bar{U}=0.85$ MA=39.423y R=0.500
 (3) 991ms Nr. 28: n=377 $\bar{U}=0.85$ MA=38.292y R=0.500
 (3) 1011ms Nr. 29: n=377 $\bar{U}=0.85$ MA=37.880y R=0.500
 (3) 1031ms Nr. 30: n=377 $\bar{U}=0.85$ MA=36.951y R=0.500
 (3) 1051ms Nr. 31: n=377 $\bar{U}=0.85$ MA=35.405y R=0.500
 (3) 1081ms Nr. 32: n=379 $\bar{U}=0.85$ MA=34.031y R=0.500
 (3) 1102ms Nr. 33: n=379 $\bar{U}=0.85$ MA=33.812y R=0.500
 (3) 1122ms Nr. 34: n=378 $\bar{U}=0.85$ MA=33.507y R=0.500
 (3) 1142ms Nr. 35: n=378 $\bar{U}=0.85$ MA=33.411y R=0.500
 (3) 1162ms Nr. 36: n=378 $\bar{U}=0.85$ MA=33.190y R=0.500
 (3) 1192ms Nr. 37: n=378 $\bar{U}=0.85$ MA=32.670y R=0.500
 (3) 1212ms Nr. 38: n=378 $\bar{U}=0.85$ MA=32.608y R=0.500
 (3) 1232ms Nr. 39: n=378 $\bar{U}=0.85$ MA=32.488y R=0.500
 (3) 1252ms Nr. 40: n=378 $\bar{U}=0.85$ MA=32.448y R=0.500
 (3) 1272ms Nr. 41: n=378 $\bar{U}=0.85$ MA=32.363y R=0.500
 (3) 1302ms Nr. 42: n=378 $\bar{U}=0.85$ MA=32.250y R=0.500
 (3) 1322ms Nr. 43: n=379 $\bar{U}=0.85$ MA=38.589y R=0.500
 (3) 1342ms Nr. 44: n=379 $\bar{U}=0.85$ MA=38.526y R=0.500
 (3) 1362ms Nr. 45: n=376 $\bar{U}=0.85$ MA=27.686y R=0.116
 (3) Final Distance limit reached

[illegible]

Fig. 58 A

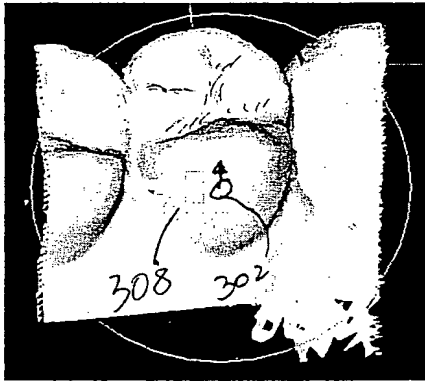


Fig. 58 B

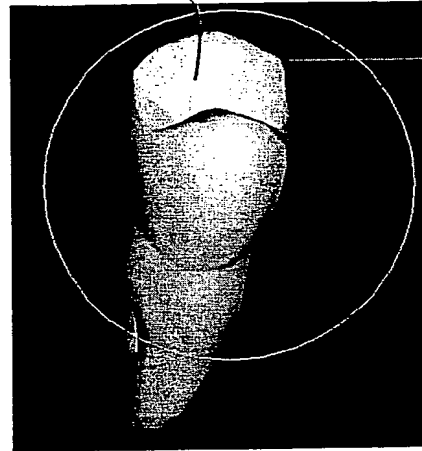


Fig. 58 C

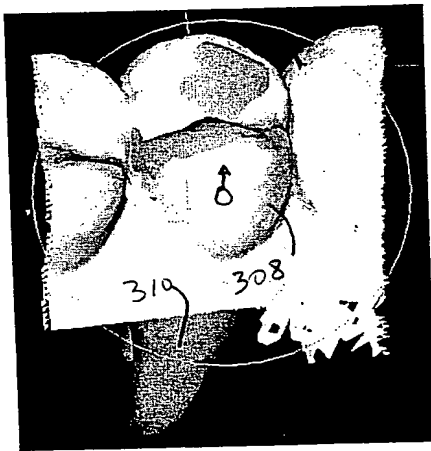


Fig. 58 D

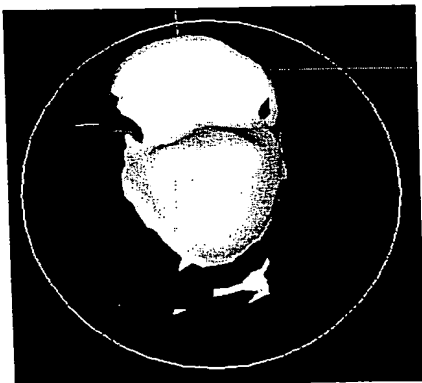
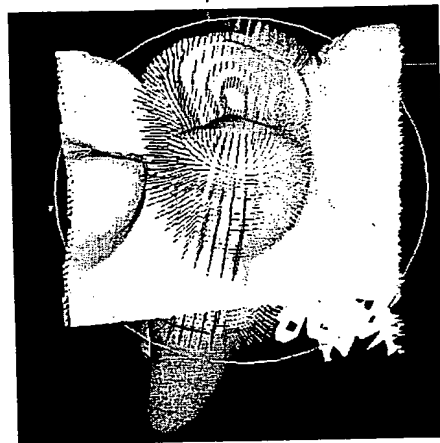


Fig. 58 E

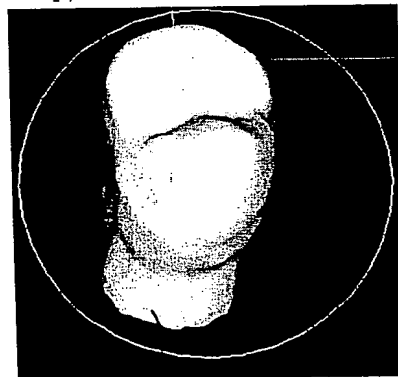
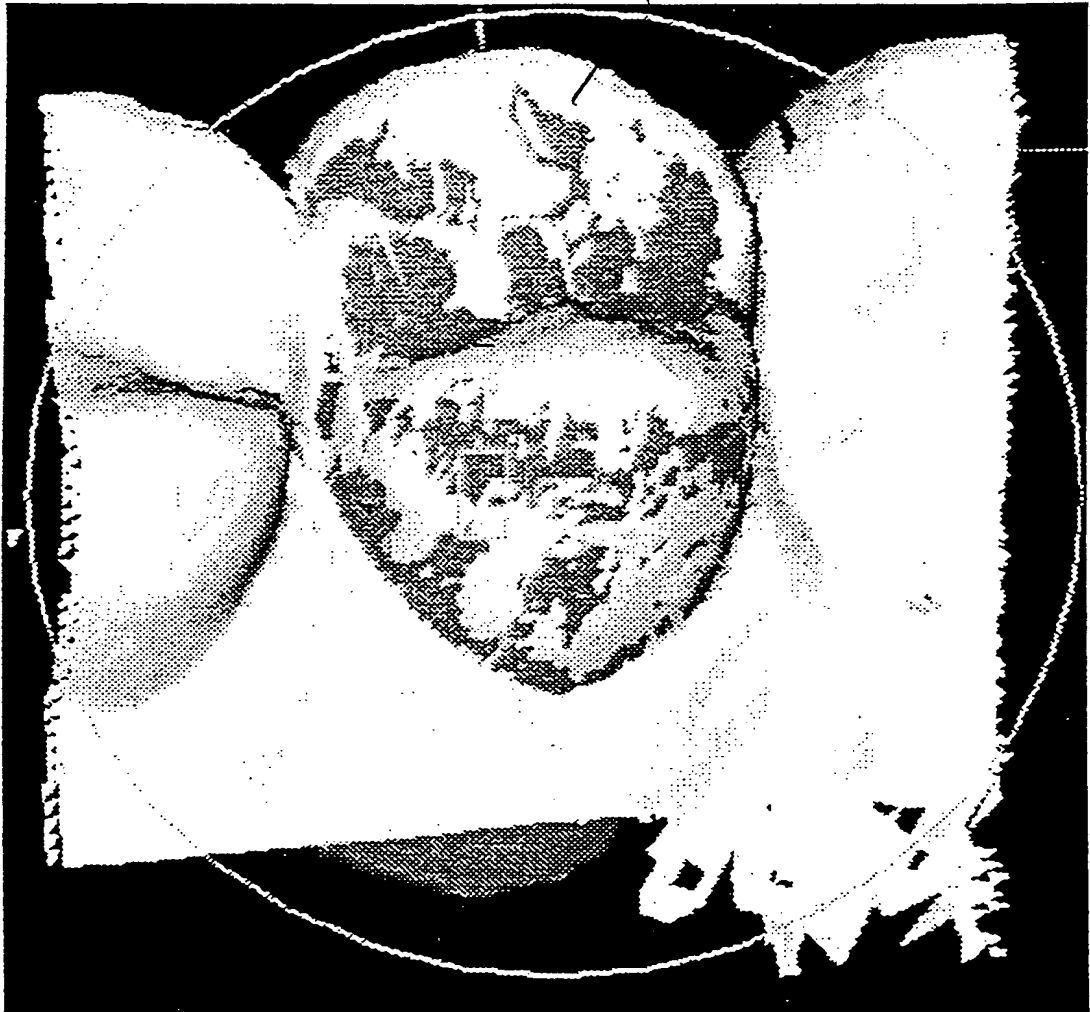


Fig. 58 F

Fig. 58 A

u).

3/2



75. 59

75.60

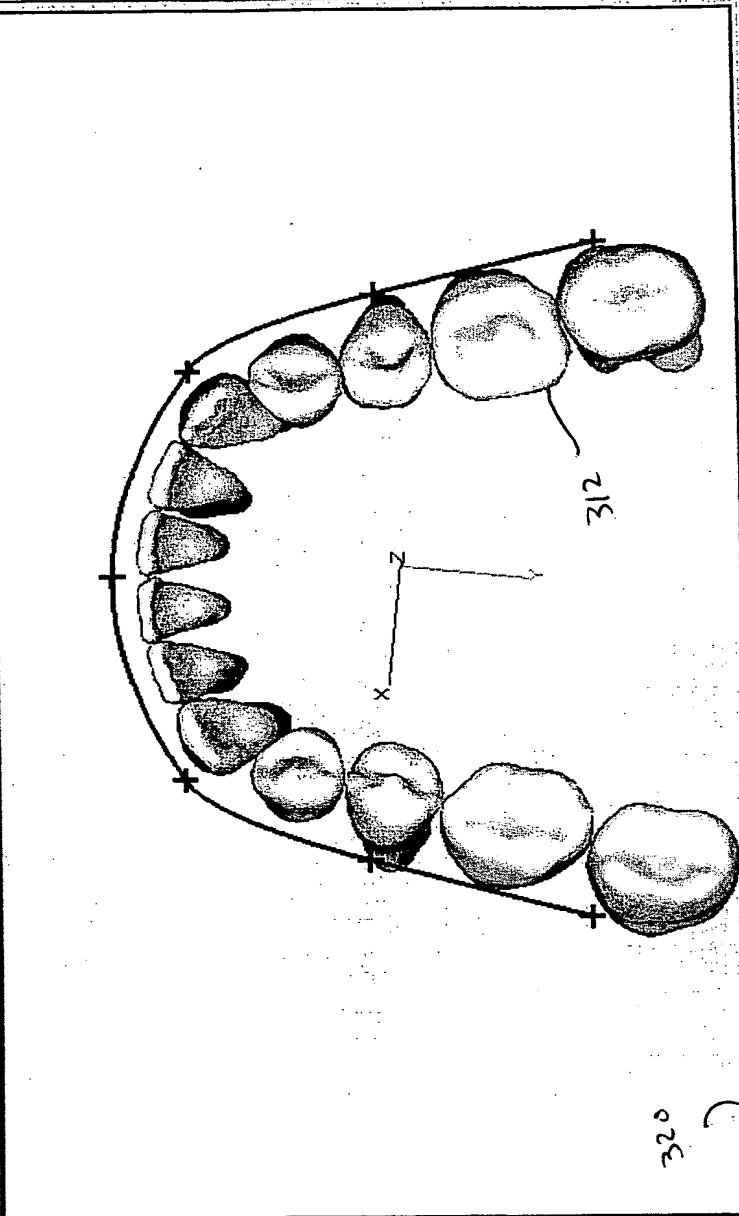
StureSmile 22.2.8

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Digital Impression Digital Treatment Planning

- ☒ Schmidt, Frank
- ☒ Maxilla Stages
- ☐ Observed (17-27)
- ☐ Target
- ☒ Mandible Stages
- ☐ Observed (47-37)
- ☒ Target



75.60

312

320

● Patient ● Limits ● Differences ● Space Management ● Bonding Correction ● Technique ● U/L Relation ● Bracket Offset ● Slide Line ● Target Correction

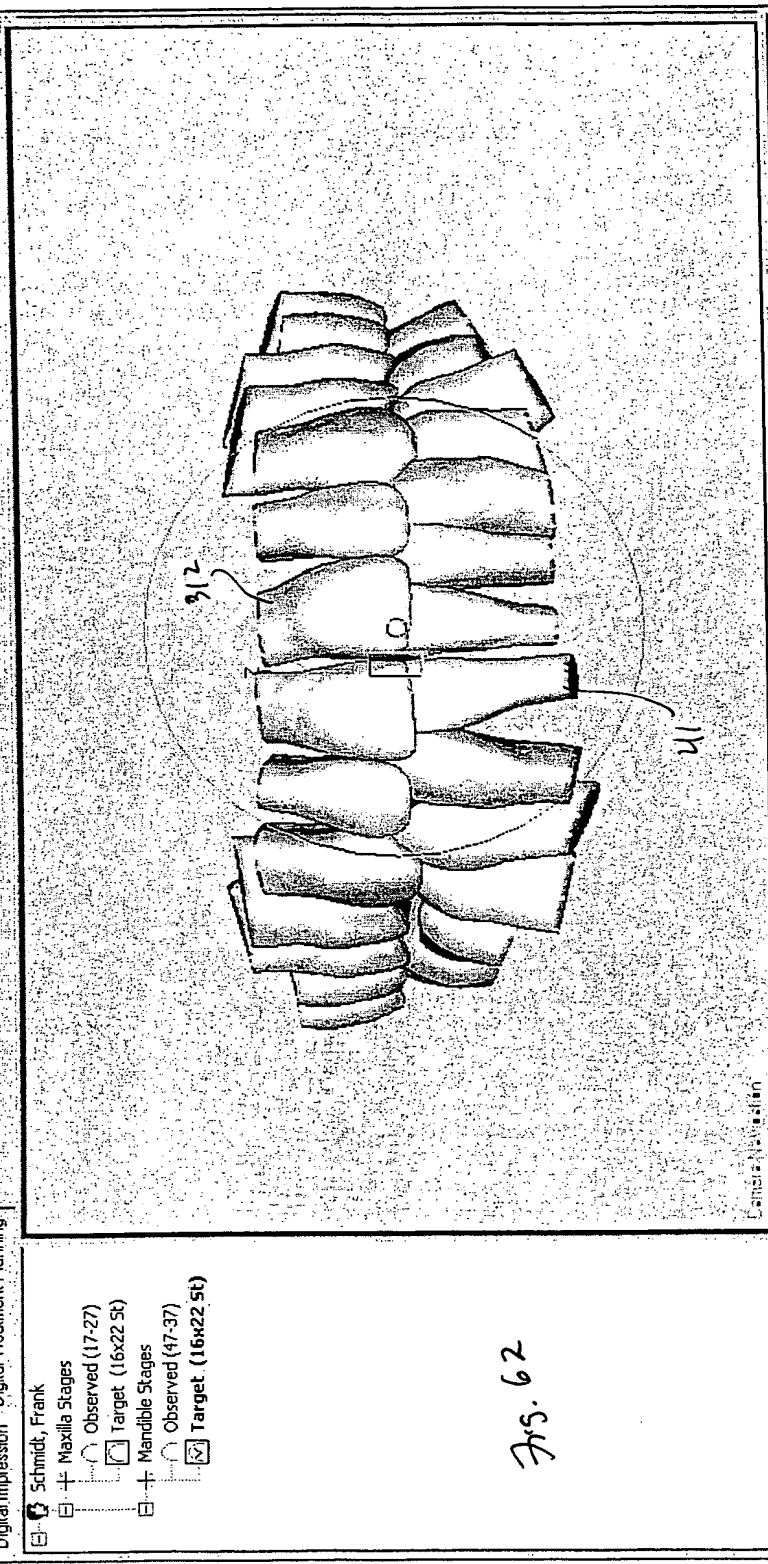
Slide Line

Cuspid Distance	30.2 mm	<input checked="" type="radio"/> Symmetric	<input checked="" type="checkbox"/> Apply on right quadrant	<input checked="" type="checkbox"/> Apply on left quadrant
Molar Dist. (47-37)	57.0 mm	<input checked="" type="radio"/> Asymmetric	Molar	Middle
Center Line Offset	0.0 mm		Transversal	Front
Radius at Front	25.0 mm		Sagittal	
			Angle	
				0.0°
				Reset

NUM

For Help, press F1

Case 17-27



- ☒ Schmidt, Frank
- ☒ Maxilla Stages
- ☐ Observed (17-27)
- ☐ Target (16x22 5t)
- ☒ Mandible Stages
- ☐ Observed (47-37)
- ☒ Target (16x22 5t)

7/5.62

● Patient		● Limits	● Differences	● Space Management				● Bonding Correction		● Technique	● U/L Relation	● Bracket Offset	● Wire	● Forces	● Wire Offset	●	
Space Management																	
48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38	Tooth is observed	
Observed Stage	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Missing or extracted tooth	
Current Stage (2)							X									Create space or extract tooth	
Target Stage							X									Mesial gap size	
Mesial gap size	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Tooth Thicken.	
Tooth Thicken.																	

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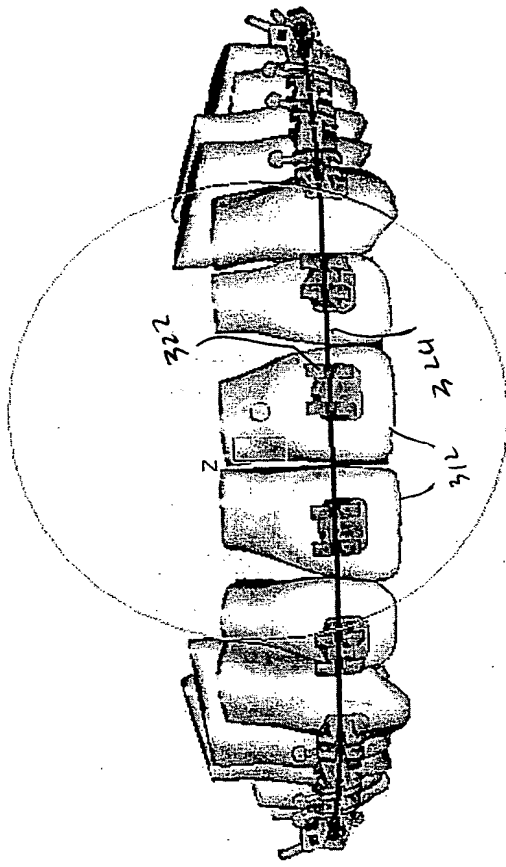
SureSmile 22.2.8

File Edit View Tools Window Help



Digital Impression Digital Treatment Planning

- Schmidt, Frank
- Maxilla Stages
- Observed (17-27)
- Target
- Mandible Stages
- Observed (47-37)



Center Navigation

Patient Limits Differences Space Management Bonding Correction Technique U/L Relation Bracket Offset Side Line Target Correction

Technique		18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28
Inout [mm]	0.4	0.8	1	1.1	1.1	0.7	1.3	1.1	1.1	1.1	1.3	0.7	1.1	1.1	1	0.8	0.4
	Torque [°]	-25	-10	-10	-7	-7	7	7	14	14	7	7	-7	-7	-10	-10	-25
Angulation [°]	3	0	0	0	0	10	8	5	5	5	8	10	0	0	0	0	3
	Dist. Offset [°]	10	5	12	0	0	0	0	0	0	0	0	0	0	12	5	10
Buccal Step [mm]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Jig Height [mm]	4	4	4	4	4	4.5	4	4	4	4	4.5	4	4	4	4	4

For Help, press F1

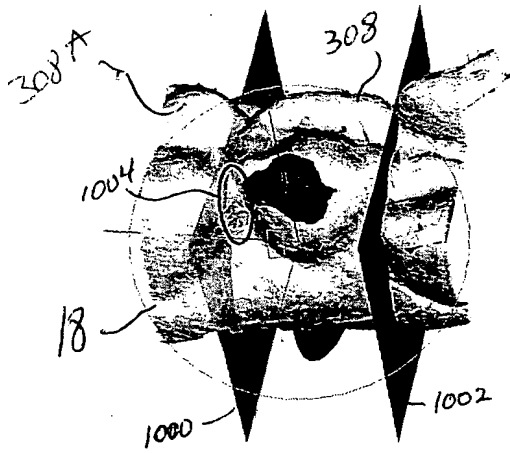


Fig. 64A

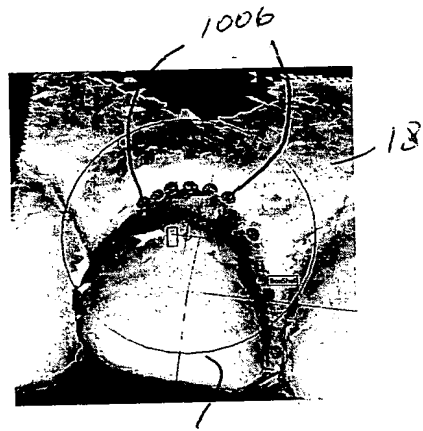


Fig. 64B 308



Fig. 64C 1008

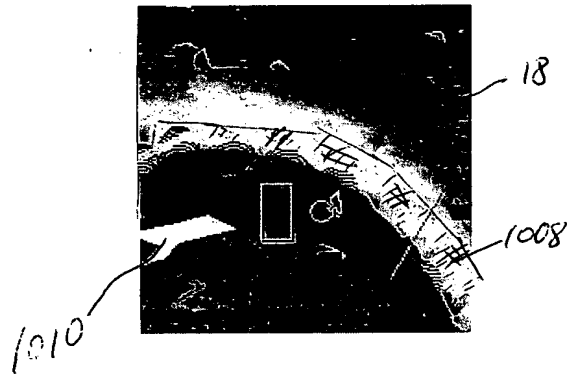


Fig. 64D

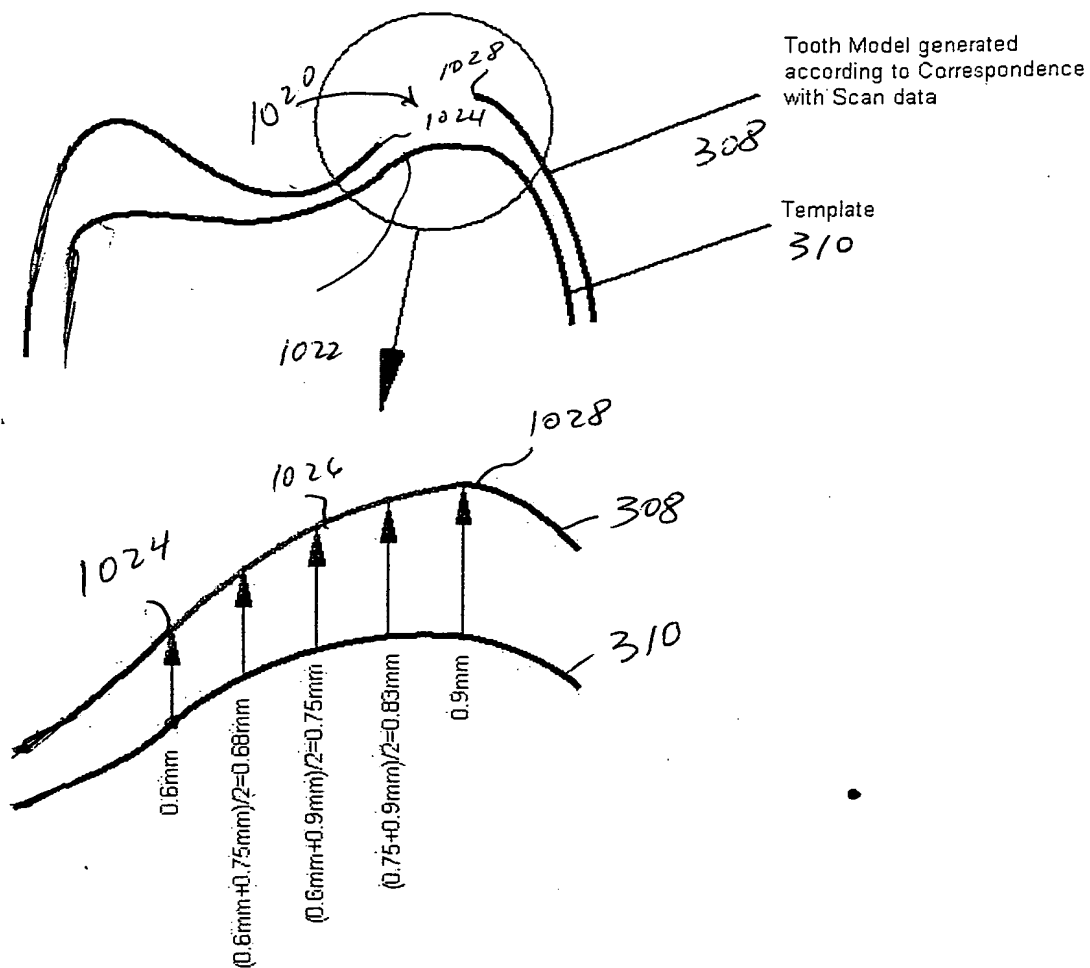


Fig. 65